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IN ZION NATIONAL PARK, UTAH

SEEING THE FAR WEST

By

JOHN T. FARIS

With 123 Illustrations and 2 Maps

PHILADELPHIA & LONDON
J. B. LIPPINCOTT COMPANY
1920

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FOREWORD

THE five-year-old found her way to her father's desk, pushed aside the maps and manuscripts over which he had been poring, climbed to his knee, and said, "Now tell me a story about Colorado."

The story was told, and the request that Colorado be pointed out on the map was complied with. Then she said, "Take me to Colorado some day!"

Another day the request was for a story about California. As before, the map was brought into play to satisfy childish curiosity, and the plea followed, "Take me to California some day. I want to see El Cap-i-tan."

Day after day father and daughter went through with the program, and the ceremony was always completed by the confident assurance that some day they would see together the beauty spots of which they had been talking. Finally, when Colorado, California, Arizona, Washington, Montana, Oregon, Idaho, Wyoming, Utah, Nevada and New Mexico had been represented in stories, there was the final assertion, "Some day we'll see them all, won't we?"

Every American should have that child's impartial interest in the natural wonders of the Far West and her determination to see not merely one or two of the states that present to the sightseer programs so varied and alluring. There will be time to have favorite spots for wandering when a general view has been taken of all the regions a bountiful Providence has so wonderfully endowed.

Having taken first the general view, there will be

opportunity to specialize by making an exhaustive study of some particular aspect of the scenery of mountains or valleys, rivers or lakes, deserts or canyons. And what a field for specialization Western scenery presents!

The traveler who follows in the wake of the discoverers of the scenic glories of the states from the Rockies to the Pacific will find that, while the railroads lead to many of the best known of these, there are many more that are at a distance from the steel highways. But those who find it impossible to leave the railways will be able to make many memorable trips. Still greater joy is reserved for those who make their way by the splendid highways that now gridiron the West, and the greatest joy of all awaits those who wander by pack train or on foot in difficult country, camping out in the mountains or on the plains, crossing mysterious deserts or delving into hidden canyons, climbing to inaccessible glaciers, or penetrating to meadow-like valleys that are tucked away in a setting of snow-clad mountains.

But take time enough! Don't think that a hurried trip across the Continent is sufficient, or that, by passing once through one of the states, vast as many a European nation, the section in question is really seen. One of the first guide-books prepared after the completion of the Union Pacific Railroad gave an itinerary for sixty days. "I cannot tolerate the idea of less than sixty days," the author added. But if sixty days was a necessity then, how much more to-day when half a dozen transcontinental lines, many cross lines, and innumerable roads for the automobile have opened up points of interest not even dreamed of fifty years ago!

Perhaps some reader may be inspired to make independent investigation that will bear fruit in disclosing some secret beauties still hidden in regions as yet not completely charted. For there are such regions in mountain and desert; they are waiting for some one to come to them. That some one may be you!

More Americans need to wake up to the fact that in their own West is scenery that is beyond comparison. Travelers talk of the Fjords of Norway; but let them go to Hood's Canal or Lake Chelan in Washington, or to the lakes of Glacier National Park! The Himalayas and the Andes are famous among mountaineers; but what of the Sierras, the Cascades, and the Rockies? These may not be so lofty, but they are as inspiring and as overwhelming. Adjectives are used exhaustively in describing the Selkirks of Canada; but there are the tremendous precipices and glaciers of Northwestern Montana. Visitors take delight in the flowers that bloom high up in the Alps; but where are flower-clad mountain meadows to compare with those of Colorado or California or Oregon or Washington? The Falls of the Zambesi in Africa are majestic; but why lose sight of the great cascades of Wyoming and Idaho, of Washington and Oregon and California and Utah, some of these two and even three times as high as Niagara? It is not strange that travelers speak with admiration of the mountain highways of Europe, yet how many realize that in the Western States are roads that surpass even the superb highway on the Stelvio Pass? There are glorious rivers in Europe and Asia, but how many of these can be thought of with the Columbia? What has the Riviera to offer in scenery and climate that the Coast of Southern California cannot

duplicate or surpass? When the lure of the desert is spoken of, why should we persist in thinking only of the Sahara or the plains of Tibet? In the West there are deserts as boundless and as attractive. Then there are the mighty forests of the Pacific Coast, and the Grand Canyon of the Colorado and the Yosemite Valley and Yellowstone Park and Crater Lake, and how many other wonders that are unlike anything to be found elsewhere!

The author, while not slighting scenes already made delightfully familiar by many writers, has sought to give emphasis also to regions of which little has been said—among others, the great National Forests whose beauties were seen in the course of more than three thousand miles of travel far from railroads; the National Parks and Monuments, especially those opened in recent years, including Zion Canyon, that wonder of Southern Utah which, so far as the writer knows, but one recent volume has touched upon; the deserts which silently and compellingly call to the traveler who hurries across them by train; and the amazing lava-built regions of Central Oregon, east of the Cascades, which will be better known to Americans when there is a through railroad from Klamath Falls to the Columbia.

Grateful acknowledgment is made to Mr. Charles Howard Shinn of North Fork, California, for invaluable help, as well as to Messrs. R. F. Hammatt, T. N. Lorenzen, T. M. Talbott, Norman G. Jacobson, A. G. Jackson, M. A. Benedict, and other genial officials of the United States Forestry Service for companionship on roads in mountain and forest.

JOHN T. FARIS

PHILADELPHIA, APRIL, 1920

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ELIEF MAP SHOWING SURFACE FEATURES OF THE WESTERN PART OF THE UNITED STATES

SEEING THE FAR WEST

CHAPTER I

THE WALLS OF PARADISE

PIKE'S PEAK AND BEYOND

Nature reveals her deepest, grandest moods
Within its vast unpeopled solitudes;
And when the purple night's calm mists are drifting,
A sense of the divine about it broods.

And he who treads the lofty land alone,
Will feel, while clouds are round him rent and blown,
Standing amid the dumb crags, skyward lifting,
A little nearer God's celestial throne.

—CLINTON SCOLLARD.

"PLEASE don't speak! This is not for words, but for worship!"

One who has the privilege of standing on the summit of Pike's Peak, 14,109 feet above the sea, is apt to feel hearty sympathy with the hero of the novelist who thus quieted a garrulous companion. He seems to be on the roof of the world. In the clear atmosphere it is possible to see an area larger than all of Pennsylvania or New York or Illinois. On three sides are multitudes of snow-capped peaks, now crowded together, again widely separated, while to the east the eye reaches out to the endless plains of Kansas. There are canyons, river valleys, mountain passes, mining districts, upland valleys, all the way from the regions beyond Denver to the glorious mountains and meadows of San Luis Park. At

the observer's feet are the bare rocks, reaching down thousands of feet to timber line, where begins the Pike National Forest, "whose towering pines, from this altitude, seem like blades of grass."

Near at hand is the lonely station of the United States Signal Service, whose observers, for a brief period, once thought they were to share their vigil with the astronomers in charge of the Bryden Fund Observatory, for which Harvard College was seeking a location. Gladly the observers received the explorers of the college as they reached the summit with their burros, laden with mysterious equipment. Curiously they watched the setting up of the gigantic telescope, a mere frame of timber with huge lens and eye-piece. Eagerly they waited for the result of the experiments, and sadly they heard the word that the conditions of the atmosphere were not favorable, that the search for a location must be continued elsewhere—a search that was not ended until the ideal site was found in 1891 at Arequipa, Peru.

Among the reasons for the astronomers' rejection of the Pike's Peak location were the frequent thunderstorms. But, while these storms seriously disturb the atmosphere, so that accurate observations of the heavens cannot be made, they are one of the attractions of the summit. At times they cause a wonderful display, so that the observers in the signal station have the pleasure of playing hide and seek with the elusive lightning and associating on intimate terms with "anemometer cups that look like circles of fire."

Those who come toward Pike's Peak from the East will agree that the mountain is as elusive as the lightning. They may think they have it almost under their

SKIING IN THE ROCKY MOUNTAINS

PIKE'S PEAK, COLORADO

hand, but they are disappointed in a manner that has become familiar to all who visit the clear, deceptive air of Colorado. From the car window the Peak seems to be close at hand even at La Junta, one hundred miles away, while from Colorado Springs one thinks it is only a step to the slopes that lead to the snowy crest, though the distance is still fifteen miles. Day after day the emigrants in their slow-moving wagons thought that the next day would surely enable them to ease their fever in the atmosphere of the cool mountain, and many of them must have felt like that disgusted one of their number who said, "I don't believe Pike has any peak."

Those emigrants might have taken comfort from the fact that the first white man who has left a record of his visit to the neighborhood of Pike's Peak made the same mistake. On November 15, 1806, while leading his expedition for the mapping of the Arkansas and Red Rivers, Lieutenant Zebulon Pike first saw a great mountain that looked like a blue cloud. As he approached it, he marveled at its white sides, which seemed to be covered with snow or a white stone.

"Three cheers for the Mexican Mountains!" the men of the expedition shouted, while their leader noted that the mountains formed a natural boundary between Louisiana and New Mexico; for at that time the mountain now known as Pike's Peak was just within the angle formed by the boundary line of Mexico as it turned north toward the Grand River and east toward the plains. Indeed, the border was so close that Pike soon crossed it unwittingly and was led by Mexican soldiers to Santa Fé, and from there out of the country.

The day after catching sight of the snowy peak the expedition hurried on, sure that the goal would be

reached before night. But they proceeded for four days more, each morning thinking that night would find them at the apparently receding mountain. Finally, after a pause on the present site of Pueblo, Pike thought that there would be ample time between one in the afternoon and sunset to reach the slopes of the Blue Mountain, as he called it. Two days later he was climbing Cheyenne Mountain, miles away from his goal, though he thought he had reached it. The night was passed in a cave near the summit. In the morning he wrote:

Arose hungry, thirsty, and extremely sore, from the unevenness of the rocks on which we had lain all night, but was amply compensated for our toil by the sublimity of the prospects below. The unbounded prairie was overhung with clouds, which appeared like the ocean in a storm, wave piled on wave, and foaming, whilst the sky over our heads was perfectly clear. Commenced our march up the mountain, and in about an hour arrived at the summit of the chain; here we found the snow middle deep and discovered no sign of beast or bird inhabiting the region. The summit of the Grand Peak, which was entirely bare of vegetation, and covered with snow, now appeared at the distance of fifteen or sixteen miles from us, and as high as that we had ascended; it would have taken a whole day's march to have arrived at the base, when I believe no human being could have arrived at its summit.

A few days later Pike took the altitude of the peak. He called it 18,581 feet. Surely he could be excused for his error, in view of the fact that as late as 1836 government surveyors insisted, after visiting the Rocky Mountain region, that many of the peaks were at least 25,000 feet high, "being exceeded only by the Himalayas."

The error of Pike in declaring that the peak that now bears his name could not be climbed, and in feeling that this did not really make much difference, since white men would never wish to dispute the Indians' claim to this sterile mountain district, persisted for many years. In 1836 Captain Bonneville, after speaking of the region as "an immense belt of rocky mountains and volcanic planes, several hundred miles in width," said that they "must ever remain an irreclaimable wilderness, intervening between the abodes of civilization, and affording a last refuge to the Indian." He proposed to leave this rich country to "roving tribes of hunters, living in huts or lodges, and following the migration of the game." There would be nothing there "to tempt the cupidity of the white man."

Only a little more than twelve years after Pike gave his opinion that the Blue Mountain could not be surmounted, Dr. Edwin F. James succeeded in reaching the summit, and in looking down on the wonderful panorama that repaid all the toil of the climb. He called the mountain James' Peak, but fortunately the name Pike's Peak was later given to it.

For many years there was nothing but a single trail for those who ventured to follow in the footsteps of James. Then came a better trail, up Ruxton Creek. Few use the old trail to-day, but the joy in store for those who have the courage to try it is apt to be greater than that of any who toil up the carriage road, who ride up the cog railway, or who take the exhilarating ride up the double track motor highway first used in 1916.

Those who would use the most wonderful of all motor roads should start from Colorado Springs, ride

up historic Ute Pass, and along the foaming Fountain Creek. At Cascade is the real beginning of the Pike's Peak Highway. From there the road rises 6694 feet in the eighteen miles to the summit.

Above Cascade were difficulties that engineers said could not be solved, but the road was successfully cut through the granite ledge, and, at a distance of fourteen miles from the beginning of the highway in Ute Pass, it reached the crest of the Rampart Range after what has been called a series of ten immense swings, forming two W's, with two swings preceding and two following. Three miles farther on is the summit.

Who cares to dwell on details of the construction of the six bridges, whose floors are of steel beams and concrete, or to think of the solid masonry parapets, and the hundred and one other excellences of this marvel of road-making, while he can think instead of the awe-inspiring vision from the chief summit of a ridge which Nym Crinkle, a writer of a past generation, called the Walls of Paradise? From there, it has been said, "more miles of mountain and plain may be seen than from any other point on the globe reached by automobile." There is the Sangre de Cristo range, and here are the Spanish Peaks. Over yonder is Leadville on its granite foundation. To the north lies Denver, with the great peaks of the Front Range. Down below are Colorado Springs and Manitou, looking like toy villages. Off to the south Pueblo holds the gaze an instant, while far beyond are those fertile plains which Washington Irving said would probably be inhabited in the future by a hybrid race made up of Indians and fugitives from justice. And far to the west are mountains from whose sides flow the rivers that have been

harnessed for the watering of lands which, but for them, would have become fit only for the habitation of the "wasting and uncivilized aborigines," who, Pike was sure, would possess them forever.

Only four or five hours are required for the journey from Colorado Springs to the summit from which all these things may be seen, and for the return trip to the foot of "the Walls of Paradise." But into these hours on the uplands may be crowded joys that will be present through many years of life on the lower levels.

CHAPTER II

UNDER THE WALLS OF PARADISE

IN THE PIKE'S PEAK REGION

ONE day in 1871, when some of those interested in the railroad from Denver to the region east of Pike's Peak were exploring in advance of the road builders, they came to a commanding site whose outlook to the west on the foothills and the great sentinel mountains, and to the southeast on the sloping plains, so impressed them that they decided they must have a town there. So they took the steps that led to the building of Colorado Springs, the city that stands at the gateway of what has been called the most marvelous range of scenery to be found in narrow compass in all the world. Dark canyons, yawning caves, graceful waterfalls, rugged mountain peaks, and towering cliffs are so abundant that the visitor is dazed by their number and overpowered by their magnificence.

Once Bayard Taylor, after gazing in rapt wonder at the prospect spread before him from a point close to the city, said:

In variety and harmony of form, in effect against the dark blue sky, in breadth and grandeur, I know of no external feature of the Alps which can be placed beside it. If you could take away the valley of the Rhone, and unite the Alps of Savoy with the Bernese Oberland, you might attain a tolerable idea of the Rocky Mountains. Nowhere distorted or grotesque, never monotonous, lovely in form and atmospheric effect, I may recall some mountain chains which equal, but none which surpass these.

From Ute Pass beautiful Fountain Creek flows to the plain where Colorado Springs has her seat, a plain almost as high above the sea as the summit of Mount Washington. From the broad streets there are inspiring views of the amphitheater of mountains that give mute invitation to a series of drives and explorations, and the traveler wishes for weeks instead of days in this favored spot.

Until 1917 Colorado Springs shared with two other cities the wonders of her situation "under the Walls of Paradise." During that year Colorado City became a part of Colorado Springs, and now Manitou only is left as a separate municipality. But it would be a mistake to permit the history of Colorado City to be forgotten. It is one of the oldest settlements in Colorado, having been laid out in 1859. At first the name was Oldtown. It was the earliest capital of the territory, and had the honor of receiving the state legislature before that body sought Golden and Denver.

Manitou lies near the entrance of Ute Pass, where the Indians had a trail that led into the heart of the mountains. Down this trail they came with their invalids, seeking the healing mineral springs, which, in gratitude to the Great Spirit, they called "Manitou."

The great pillars of sandstone that provide an entrance to the Garden of the Gods are at some distance from Manitou. These curious pinnacles, one of which is three hundred feet high, while the other is three hundred and fifty feet, give a good introduction to the weird weathered rock forms of a region that may not be a garden, and certainly has in it nothing to remind the visitor of gods, yet has a fascination that cannot be withstood. Guides have taken it upon themselves to

name the rocks of the garden, in accordance with their own interpretation of their likeness to animals and natural objects. But the visitor should feel that he has just as much right to give names to the forms according to his imagination. Differences of opinion will but add attraction to the visit. It may be that some one will think a certain rock is like a lion, while the very next visitor will be just as sure that it is a perfect likeness of a turkey. But what of that? The Indians probably had altogether different names for the formations in the park, for this was one of the places which they delighted to visit.

Among other secrets of this wonderland known long ago to the Indians, but only in recent years to their white successors, were the caves on the heights far back of the Garden of the Gods. One of these is in Williams Canyon, while the other, the much more extensive Cave of the Winds, is on the forbidding face of the canyon's limestone cliffs. These caves are connected by a pleasing story. It is related that the pastor of a Colorado Springs church organized an exploring society among his boys. One day he led his charges toward a cave in Williams Canyon, then little known, of which they had heard. The owner, however, looked askance at the company. "Very well, boys, let us find a cave of our own," was the leader's comforting word. The surprising part of the story is that within an hour they found the way to the Cave of the Winds, word of whose extensive chambers and beautiful formation the boys carried back that night to their own comrades.

Williams Canyon, whose walls are frequently so close together that carriages cannot pass there, is but one of the numerous canyons converging at Manitou,

WILLIAMS CAÑON, NORTH OF MANITOU, COLORADO

GATEWAY TO THE GARDEN OF THE GODS. PIKE'S PEAK IN THE DISTANCE

made accessible by the many marvelous roads that lead out of Colorado Springs to all parts of the park system of a city that has wisely made a playground of almost everything in sight.

Up one of the canyons reached from Manitou leads the Crystal Park auto road. By tremendous zigzags it climbs Sutherland Canyon, where Pike the explorer succeeded in outwitting pursuing Indians, up the rugged slope of Eagle Mountain, to a point under Cameron's Cone. Loops, hairpin turns, and a steel turntable help in the conquest of the mountain. The road affords views so different from those spread out before those who go to the summit of Pike's Peak that both trips are needed to complete the vision that waits for those who would persuade the Walls of Paradise to yield their secrets.

A third trip should be taken before the Pike's Peak region is left behind. This is by the Cripple Creek Short Line, from Colorado Springs to the central town of the richest gold-producing region in the world. The air line distance is less than twenty miles, but the train covers fifty miles in making a journey that justifies even such superlatives as "the trip that bankrupts the English language." By twists and turns innumerable, by tunnels and bridges and steep inclines, by loops and bends and curves, by climbing ridges and by exploring ravines, the road conquers the labyrinth of the mountain barriers and reaches the land of gold.

The Cripple Creek road leads through a country that was the delight of Helen Hunt Jackson, the novelist. It crosses the head both of North Cheyenne Canyon and South Cheyenne Canyon, where she persisted in roaming, even though the sight of a woman in these mountain

fastnesses startled those whom she encountered. She did not stop with startling men. Once, in this district, a camper's dog ran from her in terror. In vain she tried to coax the animal to approach her. "It's no use, ma'am," the owner explained; "you see, that dog's never seen a woman before."

The walls of these twin canyons, frequently very close together, are from a thousand to fifteen hundred feet high. In both canyons are numerous waterfalls. The Seven Falls of South Canyon and the Pillars of Hercules are notable features.

Immediately south of the twin canyons is Cheyenne Mountain, the peak which Pike succeeded in climbing when he thought he was on the way to the much higher peak to the north. Mrs. Jackson felt that Pike had chosen the better mountain; she knew Pike's Peak, but she took keener pleasure in climbing Cheyenne Mountain, declaring that the real glories of mountain scenery are independent of height.

On one of her trips to Cheyenne Mountain the novelist nature-lover was attracted by a grave of which she wrote:

It lies, with four pines guarding it closely, on a westward slope which holds the very last rays of the setting sun. We look up from it to the glorious snow-topped peaks which pierce the sky, and the way seems very short over which our friend has gone.

Her thoughts turned to that lonely grave on the mountainside when she was dying, and in response to her wish she was buried not far from the highest of the falls in South Cheyenne Canyon. Louise Chandler Moulton wrote of the request:

To Cheyenne Pass, she dying, whispered—
Take me there, where the strong sun will find
Me in the morns, and in the silent nights
The stars bend over me, as if aware
Their friend is kindred with their fires who watched
them long.

The roaring mountain birds will scream
Above me, flying toward the light, unscared.
Free things will trample round the lonely spot
Where rests my heart, of old untamed as they,
But quiet with Death's quietness at last.

Take me to Cheyenne Pass, and lay me there,
Within the mountains' steadfast heart; and leave me
Neighbored by the wild things and the clouds,
And still in death beneath the deathless sky.

But the day came when it seemed best to move the grave to the cemetery on the plain below, for tourists persisted in their quest of souvenirs in the chosen spot. So the body lies within the shadow of the mountain and the canyon which she loved so well.

CHAPTER III

ALLURING CITIES OF THE PIONEERS

IN Colorado events of the year 1870 are ancient history; stories of 1860 go back to primeval times; and suspicion of a man's veracity is aroused if he has too much to say of such an improbable date as 1857. For the Keystone State of the Mountains has not yet passed a commonwealth's period of first youth.

To be sure, when Colorado desires to claim a place in the company of those gray-beard states whose first settlers took root within their borders in the days when the nation was young, it is always possible to point to Pueblo, with the statement that the name is a reminder of the Mexicans who had their houses of adobe there long before Pike sought his peak or Fremont took to pathfinding in the Rockies, and that Mormons settled there for a time in 1846. But the day of the coming of the first American townbuilders was then a long way off.

It is easy to reel off figures about the Pittsburgh of the West, which turns out more than half of the goods manufactured in all of Colorado, and has a factory pay-roll of two million dollars a month. But it is so much more picturesque to speak of the magnificent faith of the promoters of 1874 who sowed the East with a pamphlet declaring, "There is but little doubt that at this point will stand the Great Central City of the Far West," and to note in passing that to-day's successors of these early boomers who were sure of the region's tremendous growth have inherited the ability to say large things of the city because they are perfectly con-

vinced of their truth. And why should they not have vision when they need only lift their eyes to the west to see glorious mountain peaks that make the town's four thousand feet of altitude seem insignificant?

The men who laid the foundations of this Gateway to the West distinguished the site by approaching the upper portion of the famous Las Animas Land Grant, a relic of the days of Mexican rule, whose original owners boasted the picturesque names Charles Beaubien and Guadeloupe Miranda. In 1841 the governor of New Mexico gave to them more than twenty-six hundred square miles. By the Treaty of 1848 the United States agreed to respect the grant. An American, Lucien Maxwell, succeeded to the ownership by marrying one of Señor Beaubien's six daughters, and by purchase of the rights of his five sisters-in-law and of Miranda. It is said that he paid to each of the ladies from three to six thousand dollars.

For a few years Maxwell had the distinction of owning more land than any one else in the world. Yet he was willing, in 1866, to resign his title for $75,000. He must have been glad he did not have the opportunity to unload, for in 1870 he was given $650,000 for the property. The purchasers made a good bargain. Within six months they more than doubled their money. After a time the princely domain became known as the Maxwell Land Grant. On its broad reaches farmers have made homes, railroads have been built, and coal mines have been opened. And farms, railroads and mines pay heavy tribute to the city that,—though it has not yet completely borne out the proud boasts of its pioneers,—is now, and probably will continue to be, the second city of the state.

Early prospectors in Colorado were so eager to find gold that they did not care to see the coal that has brought so much wealth to the state. Long before the gold was actually found travelers talked of it. A book published in Cincinnati only about ten years after the exploration of Pike made some appetizing declarations:

These mountains are supposed to contain minerals, precious stones, and gold and silver ore. It is but lately that they have taken the name Rocky Mountains; by all the old travelers they were called the Shining Mountains, from an infinite number of crystal stones of an amazing size, with which they are covered, and which, when the sun shines upon them, sparkle so as to be seen for a great distance. The same early travelers give it as their opinion that in future these mountains would be found to contain more riches than those of Hindustan and Malabar, or the golden coast of Guinea, or the Mines of Peru.

Yet it was not until 1858 that two young men from Lawrence, Kansas, told of finding gold near the base of Pike's Peak, and it was two years later when prospectors found rich dust in California Gulch, near the present site of Leadville. Soon there were two great centers of mining activity, called Old Oro and Oro. There was then so little water for washing out the gravel that this was used many times. It is related that the number of mines was so large, and the amount of water available was so small, that when the water reached the last man, after use by each miner down the gulch in succession, it was nothing but liquid mud.

In the mad rush for gold the miners passed by an even greater source of wealth. In the gulch there were many boulders in the way; these they pushed aside, thinking of them only as impediments. But in 1876

some one found that these boulders contained deposits of lead carbonate, which was rich in silver. This discovery was made on the hills on the edge of what soon became known as Leadville. Within a few weeks men and supplies were pouring into the new camp from Colorado Springs, by way of Ute Pass.

"You'd oughter been here 'bout that time," one of the picturesque characters who took freight up the pass said to a modern traveler. "Things were lively then, I tell you. Why, sir, you couldn't a' driv up the Pass then for the teams there was goin' an' comin' all the while."

Helen Hunt Jackson was one of the early visitors to "the loftiest town in the world," as Leadville was then called, by reason of its elevation of ten thousand feet, from which it looks out on Mount Elbert and Mount Massive, the twin peaks, the highest in the state, whose summits reach up more than fourteen thousand feet into the snow. She told of finding old roads leading to the town alive; she saw sixty-two wagons during the first day's journey toward the camp. "The most interesting thing in the procession was the human element," wrote this early traveler up Ute Pass; "families, father, mother, crowds of little children, bedsteads, iron pots, comforters, chairs, tables, cooking-stoves, cradles —wedged into small wagons, toiling slowly up the long hills, all going to Leadville . . . solitary adventurers whose worldly possessions consisted of a pack-mule, a bundle, and a pickaxe, and adventurers, still more solitary, with only the bundle and pickaxe, and no mule."

From the first Leadville has had to contend with many difficulties. It is so high that it is apt to snow

and freeze every month in the year. It was long thought impossible to keep pigs at such an elevation. These difficulties would seem great enough, but they were nothing in comparison to the trouble of securing an adequate supply of water.

An early visitor found a buxom washerwoman who had solved the problem to her satisfaction. "Where do you get your water?" she was asked. "Oh, I 'ire my 'usband and 'is partner to pack it up 'ere for me," she replied. "They pack up all my wash water, and I keep them in tobacco. That's our bargain."

Such primitive methods did not satisfy everybody. An enterprising company thought that here was a good opportunity to make dividends. They proceeded to lay mains. Because frost in winter found its way far into the ground, it was necessary to put the pipes six feet below the surface. But the early houses were built on piles, without foundation, so the water had to be led up many feet without protection from the weather before it could be ready for use. Of course a freeze came and the pipes burst.

But Leadville bravely solved her difficulties or found a way to bear them. Always the city has shown the same spirit that enabled her, in 1892, when the price of silver was too low for profitable mining, to discover the source of the gold that led so many men to California Gulch in 1860. And in later years great quantities of zinc and copper have been added to the products of the district.

A writer of 1879 thought that Leadville was a city of a day, like many of the mining centers. "So long as Leadville fever lasts" . . . "When the reaction comes, as it does come in all these mining excitements"

. . . "When the Leadville mines begin to dwindle in yield, and the frantic throng of delvers and settlers turn into another road"—these were among the predictions of evil. Yet the evil days have not come. Leadville is still one of the greatest mineral producers in Colorado, and one of the world's most picturesque cities.

A few miles east of Leadville is a town that has not had such a fortunate history, though it has a pleasing name—Fair Play. Yet that attractive name did not come in an attractive manner. The tradition is that "two men loved one woman. The man whom the woman loved deserted her. The man whom the woman did not love followed the faithless lover, found him, unarmed, working with his miner's pick on the banks of the Platte River. The avenger pointed his rifle, and was about to fire. But the runaway held up his hands. 'Fair play! Give me fair play!' he called. So he was sent for his rifle, and he came back to his death."

Helen Hunt Jackson, who told this story, said that one day she asked a woman:

"Do you like living in Fair Play?"

"Yes, I have been in much badder places," was the chuckling reply.

"Where was that?"

"Central. But that hole-y place; if go out house, you is under mountain."

Central City, of which the woman spoke, is in the county north of Fair Play, and is little more than an hour's ride from Denver; yet it is 8300 feet high, fifty per cent higher than Denver. The road from Denver taken by early seekers for gold rose at one point sixteen hundred feet in a mile and a half. The town itself was no worse than the approach to it.

One who saw it in the days of the pioneers said: "The houses looked like bird cages hung on hooks, jutting out from the mountainsides. Nearly every house was reached by a flight of stairs, and though it might be two or three stories high on the lower side, there would be an entrance on the level with the top floor on the upper side."

To-day Central City people are able to smile at these stories of the early aspect of the town, but they rejoice in their advantageous situation in the midst of the peaks that made access so difficult at that time.

Not far north of Central City is a town as ancient as any in Colorado—Boulder, an educational center remarkable not only for its culture but for its own particular canyon, the Boulder Canyon, and for the beauty of the Switzerland Trail that leads through it to Nederland, eighteen miles southwest, where the rare tungsten ore is mined. It is claimed that here and at Eldora, a few miles distant, most of this metal produced in the United States is secured.

Another source of Boulder's prosperity is the fertile irrigated lands almost within the shadow of the mountains. There are in the section of the state north of Denver a number of these irrigation centers. Perhaps the most remarkable of them, both because of its history and because of its present, is one of the few successful "decreed" towns in the country. It was Nathan Cook Meeker who made the decree that was responsible for Greeley, but the town was named for Meeker's chief on the *New York Tribune,* Horace Greeley. Perhaps it was as well that the great editor was not at the head of the enterprise, for his success as a town builder was

not nearly so great as his fame as an editor. Witness his failure in Pike County, Pennsylvania!

In December, 1869, many of the readers of the *Tribune* were attracted by a card in which Meeker told of his purpose to establish a colony in the west. The invitation was to temperance men who were anxious to establish a good society. The response was gratifying. Each applicant was required to pay one hundred and fifty dollars for a membership certificate. To a committee was committed the task of finding a suitable location. A section in Wyoming proved quite attractive to the committee, but they at length fixed on a part of what is now Weed County, Colorado. It has seemed to some remarkable that this choice was made, for the land selected did not present an inviting appearance. It was barren and covered with cactus. Most people would have passed it by. But the member of the committee noted that it was located in the delta formed by the junction of the Cache la Poudre, which has been called one of the most beautiful torrents in Colorado, and the Platte River. Then there were also the valleys of Big Thompson and of St. Vrain. Sharp eyes observed that a few inches of earth along the banks of the stream bore luxuriant vegetation, which looked the greener because of the contrast with the surrounding brown waste. They had a vision of the whole tract watered from the streams by irrigation and made fertile as the bits along the streams.

From the railroad 9324 acres were bought for $31,058. To private owners $27,982 was paid for 2592 acres. The United States provided 60,000 acres, on which the first filing fee was $930. Finally a contract

was made with the railroad for 50,000 acres additional, to be bought, if desired, at from three to four dollars an acre.

In 1870 the colonists began to occupy the land. Most of them came from New England and New York. It was not a part of the plan of "The Union Colony of Colorado" to have community of property; each shareholder was to have a lot in the town and to cultivate ground outside of it, the aim being "to avoid the isolation of American farm life and to secure the advantage of associated effort." With their other privileges the colonists determined to have the intellectual advantages they had enjoyed in the East. For this reason thirteen thousand dollars was soon appropriated for a school building.

This creation of a New England town meeting transplanted to the far West is of special significance in the story of Colorado because the appeal was made to those who desired to live by land cultivation, whereas other settlements had attracted only those who sought a fortune in the mines or by herding cattle.

Those who marvel at the wonders of irrigation in modern days in Colorado will be interested in the fact that the first attempts to irrigate the lands of the Union Colony were not very successful. Ditches were far too small, and there were other errors. To the discouragements due to these temporary failures others were added. Grasshoppers ate the crops, blizzards raged, hailstones fell. But at length prosperity came. Today Greeley looks out on smiling valleys where the beet and the potato are king. The town has its Potato Day, just as Boulder has its Strawberry Day and Rocky Ford its Melon Day.

Meeker, the founder of the colony, refused to take advantage of opportunities to invest in lands, and years later it became necessary for him to make his living as Indian Agent at White River, now Meeker, Colorado. But he was well content. Not long before he was killed by the Utes he was driving with a friend near Greeley. As they reached a height above the town which was the child of his best efforts, he said, simply:

"After all, although the enterprise yielded me nothing in riches, in a worldly sense, yet I am proud to have been the leader in such a movement; it will be counted an honor to everyone who took part in the settlement of Greeley. I am more than compensated in the grand success of the undertaking itself, and I have nothing to regret."

Greeley is on a fine motor road that leads from Cheyenne to Denver, the city that proudly tells of the coming there of the pioneers of 1858. The oldest portion of the future city was known as Auraria. Across the creek was St. Charles, a settlement already deserted when General Larimer came that way and laid out the old town as Denver City, naming it for Governor Denver of Kansas Territory, of which Colorado was then a part.

Denver city was young when, in April, 1859, the first issue of *The Rocky Mountain News* made its grandiloquent bow from the settlement—

Where a few months ago the wild beasts and wilder Indians held undisturbed possession—where now surges the advancing wave of Anglo-Saxon enterprise and civilization, where soon, we fondly hope, will be erected a great and powerful State, another empire in the sisterhood of empires.

The first mail came to Denver from the nearest post office, Fort Laramie, more than two hundred miles distant, a few weeks after the appearance of the new paper's salutatory. A little later came Horace Greeley, who found the best hotel so uncomfortable that he decided to "jump" one of the numerous empty cabins, which was about ten feet square. Not long afterward the owner returned. He did not seem a bit surprised to find a guest, but with the open-hearted hospitality that has characterized Denver from that day, he decided that the cabin was large enough for two.

A year later "Glittering Gold," a yellow-backed pamphlet printed to lure the adventurer, spoke of Denver City and Auraria as points on the line to the mines. Not long afterward Auraria became a part of Denver, though the business center remained on the Auraria side of the creek until it was wiped out by the flood of 1864.

Citizens of the growing town soon found opportunity to boast. They told of the record for sunshine, they spoke of the wonderful scenery, and they declared that the place was destined to be "the largest city between Chicago and San Francisco." They took as a matter of course the praise of visitors like the editor of the *New York Herald* who, in 1871, said, "Denver and Paris are the two cities with which I fell in love at first sight."

After a brief stay in Colorado Springs and a longer stay in Golden, the state capital moved to Denver in 1868. Almost from that time Denver has been noted for the persistent manner in which she permits politicians to rule her and rob her. Of course there are periodical attempts to "oust the gang," but when, after years of struggle, victory crowns the efforts of the reformer,

there is soon a relapse into a condition worse than the former state.

"Why does Denver go back?" magazine writers have asked so often that the references to Denver in that fascinating book, "Poole's Index," are, most of them, under the heading, "Politics." Edward Hungerford, in "The Personality of American Cities," has suggested ingeniously that "the isolation and the altitude, constantly tending to make humans nervous and unstrung," is responsible, in a measure, for the troubled state of local politics. This condition was vastly improved by the adoption in 1916 of a modified form of city government.

But there has been time for something more than politics. For one thing, there has been a determination to overcome the handicap laid on the city when the Union Pacific Railroad passed by far to the north. Mountains to the west seemed to forbid direct outlet to Salt Lake City, so for a season the business men were forced to be content with a roundabout road by way of Pueblo. Yet there was a man of faith named David H. Moffat who declared that a road should, could and would be built, directly west across the mountains that look so inviting to the tourist, but are forbidding and all but impossible to the railway engineer. To Moffat, however, there was no such word as "impossible"; when outside capitalists refused to be inveigled, he interested local capital and began work. Thirty tunnels were built in seventy-three miles. The summit was crossed at Rollins Pass, 11,600 feet high, though later more than two thousand feet of this height was subtracted by a tunnel through the barrier mountain. That tunnel brings Vasquez, beyond the western portal, twenty-five

miles nearer Denver than the route over the summit. The road to the summit may still be taken, and that visitor is fortunate who is able from the height to look down on the wonderful panorama of glaciers, mountain summits, and canyon walls.

The death of Moffat, the seer, caused a temporary interruption in construction, and a receivership, but work has been resumed, and the miracle line has passed through the forests and the rich coal fields of Routt County, and far over the line into Moffat County. Some day it will reach Salt Lake City, and Denver will have her direct outlet to the Pacific.

"The Mile High City," as Denver has been called, has a tremendously impressive location. From the streets two hundred miles of mountains are on display, from Gray's Peak and Long's Peak on the north to Pike's Peak and mountains still farther south. In 1865 Samuel Bowles, the famous newspaper man from New England, wrote of this setting:

No town that I know of in all the world has such a panorama of perpetual beauty spread before it as Denver has in the best and broadest belt of the Rocky Mountains, that rises up from the valley in which it is built, and winds away to the right and the left as far as the eye can see—fields and woods and rocks and snow, mounting and melting away to the sky in a line often indistinguishable, and sending back the rays of the sun in colors and shapes that paint and pencil never reproduced, that poetry never described.

That full advantage may be taken of this queenly setting Denver plans to persuade the Government to make a National Park at her doors. But, that the appeal may be irresistible, her citizens are acquiring all patented

DENVER ON SUNDAY MORNING

WINDY POINT, WHERE CHIEF COLOROW WATCHED FOR THE GOLD SEEKERS
IN DENVER MOUNTAIN PARKS

lands within the bounds of the proposed park, including the lakes on Mt. Evans.

But Denver is not waiting on the United States for her playgrounds. Already ten scattered tracts have been brought together in the Denver Mountain Parks, containing in all about one hundred and fifty miles of meadows, streams, canyons, lakes and mountains, the mean elevation being from seven thousand to eight thousand feet. The nearest of these tracts is on Lookout Mountain, twelve miles distant, approached by a concrete roadway. The tourist who takes the road is able to proceed to the other tracts in the park, over a perfect system of sixty-five miles, making a circle trip by way of Morrison back to Denver.

Lariat Trail, the road up Mt. Lookout, is one of the most remarkable roads in Colorado. The views from various points of vantage are memorable. More than once the streets of Denver, far below, and to one side, are plainly visible. Again the downward prospect is of Clear Creek, of interest not merely because of its beauty, but also because it was the scene of the first gold discovery in the state. Once, from a bold cliff, Golden appears two thousand feet below; this spot is not far from the grave of Colonel Cody (Buffalo Bill), who was buried far above the plains where he won his fame, as the most fitting place that could have been selected.

And this is but the beginning of the route through the Mountain Parks that provides inspiration and satisfaction for hours of the motorist's time, for days of the time the even more fortunate traveler who walks leisurely over the trails.

This masterpiece of road construction in the great municipal park system has not yet been completed,

though sections have been built. It connects with the Mount Evans road in Bergen Park, thirty-three miles from Denver, and is to go sixty-five miles to the summit of Mt. Evans, several hundred feet higher than Pike's Peak. Thus the total rise will be fully nine thousand feet. The final ten miles of the route will "follow the sky line of mountains that rank in height with the peaks of the continental divide," and will overlook Summit Lake, 13,000 feet high; Mt. Bierstadt, whose almost unscalable walls are a constant lure to the mountain-climber; Lake Abyss, two thousand feet down in the chasm between Bierstadt and Evans, as well as a dozen more lakes fed by the melting snows and the ice-fields that long made the conquest of these mountains so dangerous and so attractive.

CHAPTER IV

IN NATURE'S GARDENS

THE PARKS OF COLORADO

IT is the dream of Enos A. Mills to persuade Congress to dedicate as National Parks the entire Forest Range of the Rocky Mountains, from Wyoming on the north to the Arkansas Valley on the south. The eastern foothills would be included in the two-hundred-and-fifty-mile stretch of playground which would combine lofty valleys, peaks that raise their heads far above the pines into the region of eternal snow, fearsome canyons, towering cliffs, lakes of wondrous beauty, and rivers that rush and tumble in their swift descent from the mountains toward the plains.

The erection of such a park would be only the bringing together under an inclusive name of regions clearly set apart by nature for the delight of man. From the days when the territory was young these regions have been known as North Park, Middle Park, South Park and San Luis Park. Perhaps thirteen thousand square miles are embraced in these mountain boundaries, much of the territory so fertile that its development will astound even those who have become accustomed to the tales of marvelous fertility that come from Colorado. The high valleys of these parks are entirely surrounded by mountains, except San Luis Park, which looks out on the plains of eastern Colorado. Each one is distinguished as the source of one or more of the rivers that glorify the state. In North Park the North Platte begins its course. In Middle Park, which is much larger

than the State of Delaware, the Grand and the Gunnison start on their impetuous courses. South Park is nearly as large as Middle Park, and from it flow the Arkansas and the South Platte. A curious fact concerning the beginning of these two streams is that both flow from Palmer Lake, though in opposite directions. From the nearly flat surface of San Luis Park—which, geologists say, must have been at one time the bed of an inland sea —flows the Rio Grande del Norte.

These mountain parks are accessible not only by rail, but by some of the finest automobile roads in a state famous for such highways. Perhaps the most delightful of these lead to Rocky Mountain National Park, the only portion of the great natural park region so far taken over by the government. Rocky Mountain Park, which lies to the southeast of North Park, and to the northeast of Middle Park, borrows from both features of marvelous beauty and adds tremendous advantages all its own.

Those who would seek Rocky Mountain Park from Denver by highway have choice of three routes. One of these, by Longmont and Lyons, leads through the St. Vrain canyon and crosses the mountains. The Boulder route is by way of Ward, and crosses the main range of the Rockies. But the choicest route of the three is by way of Loveland, and through nearly twenty-five miles of the canyon of Thompson River. Wherever possible the roadbed through the canyon was placed on the north side of the stream, that it might have the benefit of the sun. It would be difficult to find a highway that provides for the motorist in three hours greater delight than the Thompson River road.

There were none of these roads in the days of

early visitors, but many of them found their way to the region of delight that called forth the praise of such travelers as Helen Hunt Jackson, Isabella Bird Bishop, Horace Greeley and Samuel Bowles. Joel Estes, a pioneer who made his home within the limits of the park, gave his name to its one hundred thousand acres of meadow and mountain, lake and river, nestling in an amphitheatre of the Rockies.

Approach this gem of Colorado mountains as one will, it offers an enrapturing vision. From the ridge on the north the view is down fifteen hundred feet into the valley of the Thompson River. From the plains to the southeast the dominating feature of the view is Sheep Mountain. From the adjoining Wind River Valley the eye takes in the majestic slope of seven thousand feet to the summit. And from the summit of Table Mountain, some miles northwest of the park, there is a prospect that is more splendid than any of the others.

The park is dominated by Long's Peak, named for Major S. H. Long, the explorer, more than one hundred feet higher than Pike's Peak, from whose granite top can be seen the smoke of Denver, fifty miles away, as well as summits of the Pike's Peak region. The heights east of Cheyenne in Wyoming, and mountains far to the west are plainly visible. It was the view toward this royal height that led Isabella Bird Bishop to declare, "Never, nowhere, have I seen anything to equal the view into Estes Park."

But Estes Park did not include enough to suit Enos A. Mills. For years he urged the creation of a larger park which, while appropriating the best of Estes, should include also the marvelous region immediately to the west. He succeeded in January, 1915, when the

Rocky Mountain National Park was created, with an area of three hundred and sixty-five square miles. Thirty years of residence at the foot of Long's Peak prepared Mills to be one of those whom Secretary of the Interior, Franklin Lane, once called the pioneers whose love made of the region a temple and a shrine.

Those who seek variety should turn their feet toward what this persistent love of Mills has made a natural shrine. In addition to other things which they will expect to find, they will discover glaciers and terminal moraines and glacial lakes. They will find mysterious forests and wonderfully beautiful flowers. Everywhere they turn there will be seen evidences of the activity of the busy beaver, whose dams are across the water of many streams, and if they delight in hunting they will behold on every hand evidences of mountain game that will add attraction to the wild.

It is a long way from National Mountain Park to Mesa Verde Park, the second of the Colorado reservations so far made by the United States Government; but the journey, whether made by rail or by the Park to Park Highway, which is to connect all the National Parks of the West, is crowded so full of varied and satisfying visions that the distance is forgotten. The highway leads through the heart of San Juan Mountains to the fertile valleys of Montezuma County, whose lands were irrigated by the Indians, long before the first explorers turned their steps toward Colorado.

Mancos is the gateway to Mesa Verde, the green tableland whose waters were discovered in December, 1888, by Richard and Alfred Wetherell, cattlemen from Mancos, who pushed into the Mesa by way of one of the green canyons that cut the surface in every direction.

These men were familiar with cliff dwellings of a sort, having seen them in the Mancos Canyon, discovered in 1874. But they were not prepared for the startling vision of the homes of the Indians of many centuries ago perched high up on the cliffs of the canyon in which they found themselves. Eagerly they made further investigations, and, when they carried word of their discovery back to Mancos, there was great curiosity as to the ruins.

Almost at once two hundred of the women of Colorado began the fight that was to continue for nearly twenty-five years for the preservation of the Mesa. They organized the Colorado Cliff Dwellers' Association, and did not rest until, in 1906, Congress created the Mesa Verde National Park. And when they discovered that the sixty-five miles of the reservation did not include the precious relics of the past, they persevered until the act creating the park was amended so as to take in "all prehistoric ruins that are situated within five miles of the boundaries." Thus the park was enlarged to 274 square miles.

At first the approach to the park was over a rocky road difficult even for the rider of the most sure-footed steed, but in recent years a fine government highway has been constructed from Mancos, twenty-eight miles to the Mesa. For three hours this road leads the traveler by motor up from the plain to the Mancos Canyon, then for many miles along the edge of the tableland far above the green valley. The grade is never greater than eight per cent., and the road is wide except between two points where there are telephone boxes, for the compulsory use of tourists, in accordance with the following peremptory order:

Persons approaching Point Lookout Grade in either direction must stop at telephone box and call office at Mancos, to be sure the grade is clear of vehicles, as they cannot pass on the grade without danger.

From Point Lookout, 8248 feet high, Ute Mountain may be seen with its added height of nearly two thousand feet, as well as the fertile Montezuma valley, where the Pueblo Indians had irrigating ditches that made the region fruitful. Traces of the old irrigation works have been found in out-of-the-way places.

The plateau slopes toward the south, and is cut by numerous small canyons which lead tributary streams to the Mancos River. Hidden high up on the rocky walls of the canyon are the ruined community houses of the Indians, their watch towers, and their granaries. Cliff Palace, the village discovered by the cattlemen, in 1888, is the largest of the ruins. Here twenty-three distinct clans had their abode. Spruce Tree House, named because of a large spruce tree growing in front of it at the time of its discovery, was the home of perhaps three hundred people.

Almost directly south of Spruce Tree House, and near the southern limit of the park, the remarkable discovery of the Sun Temple was made in 1915. When Dr. J. W. Fewkes reported to the Indian Department the finding and excavating of the temple, he said he was convinced that it was built about 1300 A.D. His estimate was based on study of a red cedar tree which was growing when he began work near the summit of the highest wall in the temple annex. The tree was killed in the process of excavating, for its roots penetrated the adjacent rooms. When it was cut down, the superintendent of the near-by Montezuma National

IN BIG THOMPSON CANYON, ON THE WAY TO ROCKY MOUNTAIN NATIONAL PARK

SPRUCE TREE HOUSE, MESA VERDE NATIONAL PARK. 200 FEET LONG, ONCE CONTAINED 114 ROOMS

RAINBOW BRIDGE, SAN JOSE COUNTY, UTAH
(As a guide to the size of the bridge, note horse in left foreground)

Forest counted three hundred and sixty annual rings. But the tree grew on a mound of ruined wall, so it was thought wise to add at least two hundred and fifty years for the period of the construction of the temple, its use, and its falling into ruins.

In the Montezuma Forest, whose headquarters are at Mancos, nearly seven hundred thousand acres are set aside for the preservation of just such trees. And this great forest has in it but one-twentieth of the national forest lands of Colorado, whose caretakers would agree emphatically with words written by Horace Greeley, after his study of Colorado mountains and forests:

I have no blind horror of cutting trees. Any fairly grown forest can always spare trees, and be benefited by their removal. But I protest most earnestly against the reckless waste involved in cutting off and burning over our forests. In regions which are all woods, ground must of course be cleared for cultivation; but many a farmer goes on slashing and burning long after he should begin to be saving of his timber. . . . Protracted, desolating drouth, scorching winds, and the failure of delicate fruits, like the peach and fine pears, are part of the penalty we pay for depriving our fields and gardens of the genial, hospitable protection of forests.

The visitor to Mesa Verde, after pausing to learn some of the lore of the foresters of Montezuma, will be ready for a second trip offered by Mancos, to a region wild and desolate, but so beautiful in its desolation that it is attracting many visitors, in spite of the fact that it is not yet accessible by rail, and that the roads approaching it leave much to be desired. This is the region of the Natural Bridges in San Juan County, over the line

in Utah, wonders known only since 1903, when a mining engineer and a cattleman discovered the first of the three gigantic bridges whose description has staggered even those most accustomed to tremendous figures.

Montezuma Highway from Mancos is identical with the road to Mesa Verde for some miles. Not far from Point Lookout it continues to the west to Cortez and Bluff, then to the Natural Bridges. The distance to these huge marvels is about one hundred and thirty miles.

In March, 1903, a cattleman told Horace J. Long that he had caught a distant glimpse of a wonderful bridge in a canyon not two days' journey from the Colorado River. Mr. Long persuaded him to lead the way to the place, and after a journey whose difficulty can be imagined only by those who have pushed through a parched country, in spite of quicksands and interfering willow and scrub oak and twisted cottonwoods, they came within sight of the first of the monolith curiosities of which they were in search.

When word of the discovery was taken to the outside world, the Commercial Club of Salt Lake City sent an expedition of seven men into the almost inaccessible region to secure full information of the newest attraction in that most interesting state. At last the explorers came to White Canyon and its tributary, Armstrong Canyon, where they stood in amazement before the colossal bridges of nature's own building, so much larger than the Natural Bridge of Virginia that the favorite haunt of the pioneers of the Old Dominion seems like a toy in comparison.

Edwin Bridge, the smallest of the three discovered, lies across Armstrong Canyon. Its span is 194 feet,

and it is 108 feet above the bed of the canyon. At the top it is 35 feet wide, while the arch at the centre is ten feet thick.

"I am the first white man who has ever ridden over this bridge," was the proud boast of Mr. Long, who startled the world by telling of the wonders of the canyon.

Three miles down Armstrong Canyon from Edwin Bridge is White Canyon, spanned by Caroline Bridge, which Long's cattleman companion named for his wife. The distance at the ground between buttresses of this mighty bridge is 208½ feet, or more than twice as wide as an unusually broad city street. It is 197 feet from the water that flows beneath its majestic arch to the center of the stone above. From here it is 125 feet more to the floor of the bridge. One observer has said of this floor, which is 127 feet wide, "an army could march over in columns of companies, and still leave room at the side for a continuous stream of artillery and baggage wagons."

The third bridge is found several miles up White Canyon from the Caroline Bridge. Its proportions are even more tremendous. It has been calculated that if the Capitol at Washington were placed beneath the arch, there would be fifty-one feet between the top of the dome and the stone, and that if the tallest of California's Calaveras trees could be planted in the bed of the stream, thirty-two feet would separate the loftiest branch and the lower side of the arch. Mr. Long claimed the privilege of naming the bridge Augusta, in honor of his wife.

Of this bridge the statement has been made: "It is set in the midst of big things. The trees beneath are

giants of their kind, the cliffs roundabout are massive and towering, but the sweeping lines of the colossal bridge dominate everything, making the horsemen look like pigmies, and the great pines that cling to the abutments appear like shrubbery. It is of a light red hue, somewhat weather-stained in places, but glowing in color on the under side of the arch, where it is protected and where the cleavages are fresh. A sense of enormous strength pervades it, a sense that it has endured for ages, and will endure for ages yet to come."

In canyons near the bridges are cliff-dwellings of the Pueblo Indians that would seem wonderful to anyone who has not first examined the Mesa Verde ruins, but the memory of those pueblos of the tributary canyon of the Mancos and the knowledge that not far away is the giant of all the bridges will hurry the sightseer on. The journey to a point sixteen miles below the junction of the San Juan and the Colorado is difficult, but it is well worth taking.

A few venturesome explorers had passed along the Colorado River at this point, but they were ignorant of the existence of a bridge four miles up on a canyon which entered the stream from the east. The discovery was made in 1908 by W. B. Douglass of the United States Land Office, who had been instructed to find a bridge of which whispers had come from Indian sources. Piute guides showed the way. When the bridge was reached one of them refused to pass under the arch. He explained the reason. The bridge was called Nonnezosche, or the rainbow. It was supposed to represent the rainbow, or path of the sun, and no one who passed beneath was allowed to return unless he repeated a form of prayer. "Apparently he had for-

gotten the prayer and feared vengeance if he broke the prohibition."

The Rainbow Bridge is 308 feet high, 278 feet between abutments, and 20 feet thick in the narrowest part, but 42 feet thick at the center of the arch. The canyon spanned by it extends from Navaho Mountain northward to the Colorado. It can be seen from the top of the mountain, but at that distance it appears to be a tiny arch indeed. Thirty-five miles over difficult country separate the lofty observer from this greatest marvel of all the region, and two days are required to make the journey.

Rainbow Bridge is in the Indian Reservation, and it has been made a National Monument, so that it is free of access to all. The three bridges near Mancos also constitute a National Monument.

Surely it will not be long till the canyons of the Natural Bridges are recognized resorts for tourists. When a railroad spur is built to them thousands will turn aside every season to inspect the great arches and speculate on the strange people who dwelt in the cliffs so long ago.

CHAPTER V

IN GARDENS OF MAN'S DEVISING

THE IRRIGATED LANDS OF COLORADO

ONCE it was thought in Colorado that gold and silver were the only products of the country worth considering. Some pioneers hinted that the soil was capable of producing enormous crops, but this enthusiasm did not receive much encouragement. However, folks began to open their eyes in 1863 because of John Russell's experience with his potato crop not far from Denver. Not long after the tubers were in the ground the Indians drove him away. After several months he returned to find his crop doing well. Then came a dry spell, and the grower was so discouraged that when a man rode by on a pony the offer was made to trade the potatoes for the pony. "But how could I get away from this country without a pony?" the horseman said, as he rode on. Then the showers came, and the potatoes flourished. The product sold for $22 a hundred pounds in the farmer's furrow, or $26 a hundred pounds at Denver. Total receipts for the crop he had proposed to trade for a pony were $11,600.

Such experiences began to open the eyes of the pioneer to the fact that it was not necessary to be content with conditions like those described by Washington Irving in "Astoria." The country to the east of the Continental Divide he spoke of as the land where no man could permanently abide, for in certain seasons of the year there was no food either for the hunter or his steed. The herbage was parched and withered; the streams

dried up; the buffalo, the elk, and the deer wandered to distant parts, leaving behind them a vast uninhabited solitude.

To correct such untoward conditions two things were needed—an unfailing supply of water that would make the toiler on the land independent of the sparse and irregular rain, and a method of conquering the insidious poisoning of the soil by alkali.

The rich country about Fort Collins furnishes illustrations of the effective methods employed to combat these difficulties. First came the beneficent irrigation that has transformed so many districts from waste lands to productive gardens. But in the train of irrigation came alkali poisoning to lands that were thought to be immune. A farmer might congratulate himself that he had no alkali on his place. Trees flourished everywhere, grain grew luxuriantly, and the entire ranch was a scene of beauty. Then, all at once, a change came. Perhaps there was a spot in a cornfield that refused to bear, or a few trees in the center of a flourishing orchard would die.

The explanation was simple but disconcerting. Far down beneath the surface was a white chemical, a solution of calcium sulphate, that was harmless so long as it could be kept beneath the surface. But as water evaporated from the surface, water farther down was drawn upward. With it came the alkali solution. After the water reached the surface, it evaporated, and left a deadly alkaline crust that seemed for a time to sound the death-knell of the hopes of orchards and gardens.

There were those who said that the lands could not be redeemed. But the government engineers believed they could conquer the alkali. At least they proposed

to try. They persuaded a number of ranchmen near Fort Collins to let them make the attempt, and to the surprise of everyone but the engineers the attempt was successful. The method used seemed simple. By ditching and tiling, by repeated harrowing and flooding, the alkali was washed from the surface and from the soil beneath the surface. So well was this done that men became eager to buy thousands of acres of land that once could have been had for a song. The cost of reclaiming an acre was only from ten to forty dollars, an expenditure that seemed out of all proportion to the wonderful results secured in the threatened region.

The most spectacular results of man's efforts to harness the forces of nature for the changing of a desert to a garden appear in Western Colorado, not far from the Utah line. There, in Grand Valley, and in the Uncompahgre Valley, associations of fruit growers and farmers, assisted later by the state, succeeded in the placing of fruitful orchards and bountiful crops on thousands of acres that seemed to be at one time a hopeless sagebrush desert. But not until the Reclamation Act of 1902 was passed, when the United States Government began its beneficent work for valleys crying aloud for water, did the desert really begin to blossom as the rose.

Grand Valley first attracted the attention of the homemakers. In 1881 settlers rushed in when the Ute Indians were removed to Utah. By 1886 45,000 acres had been irrigated, and the work halted because of the great expense of the gravity canal that would be required to irrigate from sixty to ninety thousand acres more just as promising.

When the engineers of the Reclamation Service be-

IN GUNNISON CANYON, COLORADO

ON GRAND LAKE, COLORADO

gan work in 1913 they had conceived a daring plan to divert the water of the Grand River into a canal system on the north side of the river, by a dam about eight miles from Palisade. By this means lands west of Grand Junction would be cared for. It was hoped that, by a tunnel through the mountain, water could be carried over to the sagebrush lands of Eastern Utah, but when it was learned that the valleys there were two or three hundred feet higher up, this part of the project was abandoned.

Grand Valley, where the dam is located, is thirty miles long. For more than one hundred miles the river rushes between high canyon walls, from the time it enters Gore Canyon near Kremmline until it reaches Palisade. Then, after the open interval of Grand Valley, comes another canyon which hides the waters until they reach Green River, Utah.

It has been pointed out that the engineers had to solve the difficult problem of raising the level of the river at low stages sufficiently to send 1425 cubic feet of water per second into the main canal, and yet at high water to pass a flow of 50,000 cubic feet per second without raising the water level to a point where it would endanger the roadbed of the Denver and Rio Grande Railway. How completely the problem was solved may be understood by those who visit the dam at Palisade, then survey the astonishing orchards of cherries and apples and peaches and pears, the luxuriant vineyards, the fields of strawberries and raspberries, and the lands devoted to crops more prosaic but just as necessary.

Southeast of Grand Valley is the valley whose landowners did the best they could with the uncertain flow

of the Uncompahgre River, at the same time casting longing eyes at the nearly parallel Gunnison River, whose unfailing water supply would mean the complete metamorphosis of the valley, if only it could be brought to them. And there was no way of finding whether this could be done unless some one should first explore the terrible depths of that thirty-mile stretch of canyon.

Who would do this? No wonder men hesitated. But there were five heroes who, thinking of the great good that might be accomplished through their hardihood, resolved to make the attempt.

These men, W. W. Torrence, government engineer, and four assistants, undertook what was as dangerous as anything ever done by a government employee. They would have been willing to be let down by a rope into the canyon at the point where it was proposed to have the entrance to the tunnel, but everybody knew that no rope would stand the strain of passing over the jagged edges of rock encountered during the descent of more than a half mile. There was only one way—to enter the canyon thirty miles above and descend to the spot in question.

The brave men started. At intervals along the top of the canyon walls watchers were stationed whose duty it was to peer down on the explorers and send word to their homes of their safety—or their death. After climbing to the river, the explorers pushed into the water stout canvas boats stretched on oak supports. Then began days and nights of terror.

Almost in darkness, with spray dashing all about them so that they were wet continually, compelled to yell at one another because of the great noise made by the cataracts, the heroes pushed on their way.

Waterfalls, rapids, rocks, whirlpools, succeeded each other with bewildering rapidity. Sometimes in the boats, again in the water, still again climbing over the rocks, while ropes held them fast together and to their precious boats, they advanced slowly and painfully. The first day less than a mile was covered.

The terrors and the hardships of the next few days are indescribable. By day they fought boulders and rapids, eddies and whirlpools. By night they longed for the sleep which they could not secure; they were too weary to rest.

The watchers on the edge of the canyon lost sight of them. For five days they saw not a sign of life. Giving up the heroes for dead, friends prepared to catch their bodies in wire nets put into the water at the mouth of the canyon. Just then they caught a glimpse of them alive.

For three weeks the travelers toiled on. Then they were utterly exhausted. Their food was nearly gone. But they did not give up until the day when they were able to travel only one hundred yards, when the walls, perpendicular, glassy, were twenty-five hundred feet high, and only twenty-eight feet apart. They had come to what they called "The Falls of Sorrows." They could not go on. How could they escape? They bowed their heads and asked God to help them.

God helped them. He led them to a fissure in the canyon wall, up which they decided to climb. At times the chosen way was almost perpendicular, but they kept on. Tied together, with the spike-shod tripod legs of their surveying transits for staffs, they painfully picked their way, sticking to the precipice edge like flies.

Night found them still five hundred feet from the

top. "Their lips were purple and swollen to triple size for want of water," their story has been told. "Their hands were cut, the palms were raw from contact with jagged rocks and from the chafing of the rope. Eyes were swollen and bloodshot and faces were covered with a quarter-inch-thick mask, where a layer of rock dust had settled and had been baked in with the perspiration."

On they went in the dark. For five tedious hours they persisted. At last, bruised and almost lifeless, they were among their friends.

They were told that this experience should satisfy them. But as time passed, the leader of the first expedition, seeing still the vision of a desert valley made to blossom as the rose, took with him A. L. Fellows, another engineer, and entered the canyon. As a substitute for the useless boats, a rubber air-mattress, four by six feet, was taken along. On this all their equipment was placed. The men waded or swam beside the mattress. Thus they covered fourteen miles in two weeks, after untold hardships reaching the Falls of Sorrows.

Days more of privation and marvelous escape. Then the men paused on the brink of a precipice over which the river disappeared. What was beyond? Did the river go underground? They could not tell. The only thing to do was to go over the falls. Fellows went first, and disappeared. Torrence followed in the raft. He found Fellows lying exhausted on a shelf of rock beyond the falls.

Hours went by before the men were able to move. Then, hungry after sixteen hours' abstinence from food, they ate their last spoonful of baked beans and, scarcely able to stand, began taking notes and snapping photo-

graphs of the spot. Just then a mountain sheep passed them. They caught it, and ate it as they killed it. In the strength of that food the companions went on into dangers even greater than those they had passed. Once they had to throw themselves into the river as it foamed through a dark tunnel through a mass of broken rock. Strange to say, they came out safely, and they were soon at the end of their thirty-mile trip.

Then came the building of a road into the canyon, that machinery might be taken there. Finally work began at the same time from points on opposite sides of the mountain to be pierced.

The driving of the tunnel six miles long would have been a herculean task even under the most favorable circumstances. But conditions were far from favorable. There were cave-ins and springs of hot and cold water broke in on the workers. Once when an enormous flow of water was tapped, carbon-dioxide in great quantities sent the men to the surface in a panic. Even after three weeks it was still impossible to work, and it was necessary to construct a ventilating shaft about seven hundred feet deep, through the rock, for air.

The first water for irrigation was delivered through the tunnel in 1910. Next came the completion of the dam in the canyon of the Gunnison for the diversion of the stream into the mountain passageway, and the eleven-mile canal from the western portal of the tunnel to the valley where more than one hundred thousand acres had waited long for the unfailing water supply. The tunnel and dam can be reached without difficulty from Morton, one of the chief towns of the smiling valley.

It is difficult for those who see the lands as they

are to-day to realize what a change has been wrought here by irrigation. However, it will be necessary to look on other valleys where the beneficent work of the reclamation engineer has not yet been done to appreciate the tremendous transformation accomplished in Uncompahgre Valley. Those who have made the comparison will be in position to smile at the picturesquely contrasted titles of magazine articles that have been written about the work of the Reclamation Bureau. Look at some of these, chosen at random:

The Drama of the Desert; Is Uncle Sam Turning Socialist? The Service that Makes the Desert Blossom; Why Irrigation Projects Fail; Uncle Sam's Romance with Science and Soil; The Eden Makers; How Irrigation Service is Robbing the Settlers; Reclamation's Part in the Pork Barrel; Our Paternal Uncle; The Human Factor in Industry; Uncle Sam, Law Breaker.

What different points of view are taken by poet and politician, practical man and demagogue!

CHAPTER VI

ONE THOUSAND MILES THROUGH THE ROCKIES

TO Pike and Fremont and others of the early pathfinders Colorado proved a labyrinth almost impassable, but the way has been made easy to their successors who wish to pierce to the heart of the ranges, climb the passes and the peaks and solve the appealing mysteries of the alluring Rockies. The ingenuity of the railway surveyor and engineer and the determination of the builder of highways have made accessible practically all the marvels of a region that is ever calling to the adventurous to discover the "something lost behind the ranges." The search is wonderfully aided by the freedom offered by the nineteen monster National Forests which stretch over a large portion of the mountains. Everywhere through these forests lead roads and bridle paths that make easily accessible points that otherwise would be forbidden territory. Specially notable in this respect, and so easily explored, is the Pike Forest, whose million acres stretch from Colorado Springs to Denver, and include Pike's Peak, with numberless other attractions any one of which would make a region remarkable.

But Colorado is not a land of a single high peak, or even a dozen or a score. It is difficult to realize that within its bounds are at least one hundred and eighty mountains higher than twelve thousand feet, while there are more than one hundred and ten mountains higher than thirteen thousand feet each. Of the fifty-four summits in the entire country with heights

greater than fourteen thousand feet, to which definite names have been assigned, forty-two are in Colorado. In an advertising booklet, which, after the fashion of its kind, is characterized by florid statement, perhaps the most startling sentence is given as a fine print footnote to a pictorial map of mountain peaks: "There are many peaks between 13,500 and 14,500 feet in height, which are unnamed, and therefore are not given on the map."

And all this within an easy journey from any part of the United States! Those who wish to see mountains do not need to wait until they can go to the Alps or to the Selkirks. There is a point in the eastern Selkirks of Canada where the tourist is told that he can see a dozen great peaks. But there are points in Colorado where he can do much better than this. From the Marble Pavilion in Cheesman Park, Denver, for instance—standing at the time on a height greater than that of the proudest summit in Scotland—one can see from forty to fifty named mountains, from Pike's Peak in the south to Mount Ypsilon in the north, a distance of one hundred and thirty miles.

Fifty-one miles northwest of Denver is Long's Peak, where Enos A. Mills has made his home for years. From this mountain he goes on exploring trips among the hundreds of other peaks in the state; for, as state snow-observer, it is his pleasure to circle here and there studying conditions and triumphing over difficulties as only a confirmed mountain lover can triumph. Once, while twelve thousand five hundred feet high, he was overtaken by a blinding storm, deadly cold. To pause long would mean death. A friend told of his experiences:

He started for the head of a gorge, thinking to climb down it to the nearest timber. Nothing definite could be seen. The clouds on the snowy surface and the electrified air gave the eye only optical illusions. In the midst of these illusions he walked out on a snow cornice overhanging a precipice. The snow gave way beneath him. He was buried in it. Then it ceased moving downward: the mass of snow with his body had fallen on a narrow ledge, and caught there. When he thrust his head from the mass of snow and looked around him, he was appalled to see the terrible height of the precipice on the face of which he was hanging. It took him two hours to work his way back the twenty feet to the top.

Directly west of Denver is the overpowering bulk of Gray's Peak, while near-by, on Argentine Pass, is one of the world's highest wagon roads; its altitude is about thirteen thousand feet. To Samuel Bowles, traveler of 1868, this was one of the outstanding sights of the mountains. "No Swiss Mountain view carries such majestic sweep of distance, such sublime combinations of height and depth and breadth; such uplifting into the province of God," he wrote. "It was not man, but God, that was about, before, in us."

Not so far from Gray's Peak that famous bit of railway engineering, the Georgetown Loop, shows how one corps of railway builders solved a difficult problem of mountain engineering. Another world-famed marvel is near the southern limit of the Denver prospect—the Royal Gorge, just far enough to the west of Cañon City to afford an opportunity to traverse the attractive Sky Line Drive, built "on honor" by convicts from the State Penitentiary, on the sharp summit of a limestone ridge. This ridge dominates on one side the valley where the

town nestles in its orchards nearly a thousand feet below, as well as that new triumph of scenic roadbuilding, the new Phantom Canyon Highway to Cripple Creek. On the other side of the summit, across the valley, is the Royal Gorge Park, a district eight miles square which Congress gave to Cañon City for its own particular breathing spot. Within the park the Sky Line drive has its terminus, on the brink of the Royal Gorge. It is not enough to see the stupendous chasm from below, where the railroad crosses the stream with the gorge at a point where it was necessary to hang a bridge from the rocky walls; the picture should be completed by peering down nearly three thousand feet to the silver thread of the Arkansas and the toy railroad by its side.

Beyond the ten miles of the passage of the railroad through the gorge and the Grand Canyon of the Arkansas—a passage made necessary, in the face of the vociferously shouted "impossible!" of doubters, by the clamor of Leadville for connection with the world of commerce—is Salida, a town that rejoices in an extensive mountain view that includes the Sangre de Cristo Range, the Collegiate Range, whose lofty mounts Princeton and Yale dwell in peace with even loftier Harvard and Mount Ouray and Mount Shavano, distinguished, among other reasons, because between them lies Marshall Pass, where the narrow gauge line makes eleven loops in the course of its serpentine passage.

Between Salida and Leadville there are always in sight so many mountains that it is almost impossible to keep track of them. From Leadville, Mount Massive, the highest peak in Colorado, is visible in surpassing majesty, ten miles southwest of the city, while about it are glaciated peaks of the Sagauche Range, where lie

ROYAL GORGE, FROM THE TOP, NEAR CAÑON CITY, COLORADO

THE SKY LINE DRIVE, CAÑON CITY, COLORADO

MOUNT OF THE HOLY CROSS, COLORADO

hidden blue lakes and sparkling cascades innumerable.

The famous Mount of the Holy Cross, named because of the cross ravines near its summit filled with never-melting snow, may be reached from Leadville, but a better point of approach for those who wish to become familiar with it is from Red Cliff, near Eagle River Canyon, where the tracks of the railroad are on both sides of the stream, the engineers not having found room for both on one side, and where, from the track, the traveler may look up nearly two thousand feet and see the black mouths of many mines, "like dormer windows in the granite mountain roof."

Eagle Canyon has a surprise up its sleeve, for, hidden here in the fastnesses of the mountain, are some of Colorado's most fertile lands. Eagle Canyon leads to the more forbidding Canyon of the Grand and this in turn shows the way to Glenwood Springs, where the Ute Indians turned for healing when their beloved Manitou had been left behind forever.

There is another reminder of Manitou some distance farther on, beyond the smiling region of irrigated Grand Valley and prosperous Grand Junction—the highly colored sandstone monoliths, hundreds of feet high, within canyons whose towering walls are the frame of these features of the fourteen-thousand-acre Colorado National Monument. This monument owes to the tireless efforts of John Otto its inclusion among the playgrounds of the Nation.

There are so many notable canyons in Colorado, it is impossible to name them all. But each has its distinctive features. South of Grand Junction and east of Montrose some of these water-worn fissures have supplied many railroad engineers with problems that satis-

fied even their rapacious appetites for conquest. In the Black Canyon of the Gunnison—why was it called black when it presents an aspect so pleasing by reason of its many-colored rocks?—they found the combination of tumbling stream and scattered boulders, of rocky walls and narrow ledges, that gave them delight in their work of mountain conquest. "The canyon is but a cleft in the heart of a mountain," an early traveler described it vividly. "Cleave Mount Washington from summit to base with a mighty stroke, and there will be made a gorge in the mountain resembling, in a sickly way, the Black Canyon of the Gunnison."

To the south of Gunnison are the mysterious San Juan mountains, in whose heart is Lake City, a town built by the side of one of the many branches of the Gunnison, which meanders away delightfully into the mountain fastnesses.

Some of the mountains reached easily from Lake City are as distinctive as any to be found in Colorado. Uncompahgre Peak looks like one of the Himalayas, while Whitecross Mountain, whose tree-clad slopes are surmounted by a bare rock peak, with a broken cone on one side, is marked by a quartz cross on its side that is responsible for the name. Red Cloud Mountain, loftier than Whitecross, does not look so high from some directions because its slopes are more gradual, but its majestic proportions become more impressive as they are approached.

South of Lake City there is an alluring region as yet unconquered by the railroad, though it is approached by half-a-dozen spurs. Each of the spurs seems to be pointing a finger to scenes it has not reached, but whose attractions it knows. Here, in the most

OURAY, COLORADO

rugged region of the state, there is opportunity for many excursions to scenes of surpassing interest and grandeur.

From Creede one of the spurs calls across the mountains to Wheeler National Monument, where are set apart 320 acres of curious, majestic erosions that seem like a miniature Canyon of the Colorado, and to the near-by Wagon Wheel Gap, named because of the discovery on this alluring site by the Rio Grande del Norte of a number of old wagon wheels left behind by Fremont, the explorer, at the close of the fearful winter spent there by his hardy pioneers when their leader attempted to cross the Rockies at the wrong season, in the face of the warnings of Kit Carson.

To the west of Lake City, at the end of another spur, Ouray has a commanding location on the bank of the Uncompahgre River, and at the beginning of the remarkable twenty-four-mile mountain road to Silverton. For the first twelve miles to Red Mountain town this road looks far down into gorges and gulches from shelves which have been blasted for it with patient cunning. On heights like these, where it is possible to see for seemingly endless miles in the clear air, the traveler will feel like shouting for the joy of living. He may try to repress his exuberance, for fear of what some fellow traveler may think of his inexperience, until he learns that the companion is as eager as he to rejoice. Then what a jubilee they can have together!

Between Ouray and Silverton many more of the tremendous peaks beckon compellingly. It is not easy to pass them and return to the railroad that plays hide and seek with the southern boundary of the state, finally crossing the divide at Cumbres Pass, almost on the

boundary line, then threading a precarious path fifteen hundred feet above Toltec Gorge, and passing among the monoliths of Phantom Curve.

"How could the road be built over such obstacles?" one is tempted to ask. A notable answer was given by Governor Hunt of Colorado who, with General Palmer, planned the Denver and Rio Grande. Once he was asked how he ever thought of getting a road over La Veta Pass, where the Veta Mountains are crossed near Alamosa, northeast of Cumbres. "A mule taught me the trick," was the reply. "General Palmer and I walked over La Veta Pass time and time again, anxious to build the line, but discouraged by every engineer in the country from attempting it. At last, one day, I saw a mule walking up the mountain. He did not go straight up, but went in a zigzag way. His movements suggested what we should do—wind back and forth up the mountain side."

CHAPTER VII

THROUGH THE LAND OF FOSSILS

SOUTHERN Wyoming is the paradise of the fossil hunter. For good measure, the fossil regions begin east of the Wyoming country, and extend clear to the Wasatch Mountains in Utah. The eager scientist for whom a country is beautiful only according to the readiness of the rocks to yield secrets of past animal life has found, near Sydney, Nebraska, bones that told him of a strange horse that pranced over the plains many thousand years ago. To this horse has been given the awe-inspiring name chalicotheres. Its front feet were long, its hind legs were short, there were three toes on each foot and each toe ended in a great claw. But the chalicotheres could take pointers from the sandyoceras whose head was like that of an antelope, though it had four horns; over the eyes were two horns that curved inward, and lower down, near the mouth, were smaller horns that curved outward. Companion animals of these awe-inspiring creatures were a camel about the size of a ship, a rhinoceros and a mastodon.

Practice on the bones of such monsters gave the eager students of skeletons an appetite for the disclosures of Como Bluff, Wyoming, where they found the bones of a dinosaur more than seventy feet long. He walked on all fours, but he could rear himself upright in what must have seemed a most ridiculous fashion. His tail stretched thirty feet along the ground. Next was his upright body, twenty feet long, and his neck, extending twenty to twenty-four feet more, while the

whole was crowned in ludicrous fashion by a head no larger than that of an ordinary horse. His weight must have been eighteen or twenty tons. He was named Brontosaurus, or thunder lizard.

Three men were in the party that discovered the bones which, when put together, showed how this mighty creature must have looked. They were scientists sent out by a museum to look for fossils. At Medicine Bow they left the train and pushed on by wagon to the fossil grounds. It was an unattractive place in which they finally pitched their tents, but they knew that here, if anywhere, they would be able to make the discovery for which they had been planning. For here was the bed of the ancient lake where dinosaurs once made their home.

At once the scientists began a careful search of the region for miles around. To most people there would have been no signs of fossils, but the trained men knew where and how to look for them. A slight indication on the surface of the rock might be enough to tell them that, buried in that rock, were bones whose scientific value was incalculable. Once no sign could have been found on the surface, but through many ages the rock had been worn away, and the bones have been exposed.

No discoveries of any importance were made for many days. Discouraged, the men decided to move on unless some sign appeared. Then one of them saw, at the base of a bluff, the unmistakable mouth of a dinosaur. Near by he found signs of a section of the backbone. He hurried to camp and told his exciting tale to his companions, who again had returned empty-handed from their scrutiny of the rocks.

Next morning the three men, as well as the laborers

who accompanied them, were searching for other parts of the skeleton. When nothing further was found, they concluded that the body lay buried in the bluff.

But the bluff was of solid rock. Then must they give up their search? They did not propose to turn back when what they sought was within their grasp. So they began the attack on the bluff.

Before they had gone far they found enough of the skeleton to show that they were on the right track. They had to revise their estimate of the length of time necessary to complete the task. A tunnel must be blasted in the hard rock, and a year, perhaps two years, would pass before their work was done.

It was impossible to remove the bones from their rocky bed, so great slabs of stone were quarried. In each slab was a portion of the skeleton. About this slab was wrapped a piece of burlap wet in plaster-of-Paris. As soon as the plaster hardened, the slab was put aside for transportation to the railroad station. Successive slabs were given numbers according to their location in the bluff, in order that, when the bones were removed from the rock, it might be possible to arrange them in order.

The entire skeleton could not be found. This was not expected, for the searchers knew that in all probability the body of the dinosaur was attacked by other greedy reptiles which succeeded in carrying away portions to other parts of the lake.

Finally all the slabs were before other scientists in the distant museum. But the work was far from complete. They knew that before them stretched from one to three years' toil, chipping away at the slabs to separate fossil bones from the encasing stone. They

faced their task with as much zeal as the scientists had shown in tunneling the Wyoming bluff. Great care was required, or the bones would be broken into small bits.

But at last the work was done, and the erection of the skeleton was begun. The head was almost perfect. So was the great neck. A few ribs were lacking, but these were made from plaster-of-Paris. There was but one hind foot, yet it was easy to make another to match it. So the work proceeded, until at last the skeleton was complete, ready for the daily procession of visitors who marvel not only at the creature which lived on the earth so long ago, but at the power of Him who preserved the skeleton in such wonderful manner.

Another eager party of Princeton University scientists made a find near Bridger, not far from the Utah line, after a long hunt, one day in 1884. They were about to give up thought of finding anything especially noteworthy when one of the party saw a jawbone with teeth sticking out of the base of a butte. To his joy the result was the uncovering of the most complete specimen ever discovered of the Mesonyx, a flesh-eating animal with peculiar claws. Probably it was not unlike the wolf in general appearance. The restoration to be seen at Princeton shows it was about twenty-two inches high and sixty-one inches from nose to tip of tail. This pioneer trailed over the Bad Lands so many thousand years ago that it is a weariness to count back to his time.

In southwestern Wyoming are two stations on the Union Pacific Railway that tell the story of more of these odd remains of an age long forgotten. There is Fish Cut, near Green River, where fossil fishes are preserved in the rock, and Fossil, the resort of the hunters for curios, to satisfy the traveler.

Whoever named these stations must have felt that he should keep pace with those who had given titles to many of the localities on the line of the Union Pacific—which is also the route of the Lincoln Highway through Southern Wyoming. Perhaps no other bit of highway in the country has so large a proportion of really descriptive names as the seven-hundred-mile stretch from Julesburg, Colorado, to Ogden, Utah.

Julesburg, for instance, was named when it was a station on Ben Holliday's stage line on the Overland Route to California. The representative of the transportation company at this point was known as Jules, and he was such an important personage that the settlement about the fort established for the protection of travelers from marauding Indians was called Julesburg. In 1865, when the original settlement was burned by the Indians, it was rebuilt on another site. Later the town was twice removed to a new location, but the name of the pioneer was always retained.

Julesburg was a bustling town in the days of the pioneers, sharing with Cheyenne, later the picturesque capital of Wyoming, the reputation for wildness. Sioux braves on the warpath, as well as immense herds of buffalo, were drawn to the locality, and there was an endless procession of the white-topped wagons of the freighter and the homeseeker. F. A. Root, a messenger on the Overland Stage Line, counted in a single day's ride, east of Julesburg, 888 westbound wagons, drawn by 10,650 oxen, horses and mules. A road experience related by the same rider by stage, whose route from Atchison to Denver led through Julesburg, helps in the formation of a vivid picture of life as seen by the old town:

An Atchison freighter had just pulled out with his ox train on Monday morning, a few minutes before the regular hour of departure for the stage-coach. I passed him on Eighth Street, then at the extreme western business portion of the city, and reached Denver in six days. Remaining there two days I started on my return trip to Atchison. On my way I met and chatted briefly with my friend somewhere near the head waters of the Little Blue River, near the Divide, perhaps twenty-five miles southwest of Fort Kearney. I reached Atchison, remaining a week. On my way west the next trip I passed my friend again on the South Platte. I reached Denver, stopping two days, then returned to Atchison on my regular trip, meeting his wagon on my way east. Remaining another week in Atchison, I pulled out with the stage-coach, once more for the Colorado metropolis. Imagine my surprise when, within a few miles of Denver, I was greeted by the freighter's familiar voice. During the time he had been making his trip of 653 miles, with his oxen, traveling every day except Sundays, I had ridden five times across the plains, a distance of 3265 miles, and had laid by eighteen days.

A man of an entirely different sort, General W. T. Sherman, gave his name to a village on the highest point of the Laramie Range crossed by the railroad, from which it is possible, under favorable conditions, to see Pike's Peak, one hundred and sixty-five miles south. When the railroad was built the rails were laid two miles north of Sherman, and a stone pyramid, sixty feet square and sixty feet high, was erected to Oliver and Oakes Ames, the brothers to whom credit is due for pushing through to completion the Union Pacific Railroad; they persisted in the face of the opposition of railroad men who said that only a madman would think of building a railroad over a mountain eight thousand feet high. The great pile of cut stone is of special

interest because, when the railroad was removed so as to decrease the altitude two hundred and thirty-seven feet, the stones were taken down one by one and were carried on wagons to the new location where the pile was erected as before. An examination of the medallions of the brothers revealed the fact that the carving of that to Oliver Ames, on the northwest side, had been much worn by the storms of forty years, though that devoted to Oakes Ames, which faced the southwest, was as good as when the pyramid was new.

Laramie perpetuates the famous Fort Laramie, named for Jacques La Ramie, a French fur trader who visited the region long before the railroad was thought of. Visitors to the second city in Wyoming are attracted to the odd pinnacles and turrets and castellated crags at Red Buttes, a few miles south, which have been fashioned by erosion from the red sandstone cliffs.

The ingenuity of those who like to account for things has been taxed by the town Medicine Bow, not far from the mountain of the same name. One explanation seems a little far-fetched, but it must be accepted for lack of a better. Some of the Indians were accustomed to go to the mountain to gather a favorite wood for their bows. Since "anything that serves its purpose well is 'good medicine,'" the name Medicine Bow was easily applied to the mountain, and after that to the town.

That it is not difficult to go too far in ascribing names to the Indians is illustrated by the attempt of some recent map makers to fasten the name Seminole on the range of mountains north of Grenville, and fifty-three miles from Medicine Bow. Evidently they thought that previous map makers had omitted a letter when calling them Seminoe, and that they had been named after the

Seminole Indians, when the truth is that the Indians had nothing to do with them; they commemorate the prowess of Seminoe Lajeunesse, one of the French trappers of the early days.

A much more picturesque character, James Bridger, gave his name to one of the last stations in Wyoming before the Utah line is crossed. As a trapper Bridger became so familiar with the country that when he was still a young man he was called "the old man of the mountains." He was the builder of Fort Bridger, and when a garrison of United States soldiers was sent there he became a guide and a scout. Once, while on the road, he met the first Mormons, bound for Utah. He did his best to discourage them from attempting to make a home near the Great Salt Lake.

One of the exploring expeditions with which Bridger came in touch, that led by Howard Stansbury in 1849, was readier to listen to tales of the difficulties of the country; they had been made ready for such stories by difficulties they had seen for themselves. Once, when near Fort Laramie, the leader wrote:

To-day we find additional and melancholy evidence of the difficulties encountered by those who are ahead of us. Before halting to noon, we passed eleven wagons that had been broken up, the spokes of the wheels taken to make pack-saddles, and the rest burned or otherwise destroyed. The roadbed was literally strewn with wheels that have been thrown away. Bar-iron and steel, large blacksmiths' anvils and bellows, crow-bars, drills, augers, gold-washers, chisels, axes, lead, bricks, spades, ploughs, large grindstones, baking-ovens, cooking-stoves without number, kegs, barrels, harness, clothing, bacon and beans, we found along the road in pretty much the order in which they have been enumerated.

The carcasses of eight oxen, lying in one heap by the roadside, this morning, explained a part of the trouble. . . . At the noon halt an excellent rifle was found in the river, thrown there by some desperate emigrant who had been unable to carry it any further. In the course of this one day the relics of seventeen wagons and the carcasses of twenty-seven dead oxen have been seen.

One of the difficult parts of the route for the emigrants was the Red Desert, first seen well near Bridger. This is a curious stretch of shifting sand dunes, that extends for a distance of one hundred miles. Many of these dunes are one hundred feet high or more. All of them are traveling with the wind in a northeasterly direction. "If a few camels and an Arab or two were added to the scene, a spectator could easily imagine himself in the Sahara Desert," writes the author of a government bulletin who evidently believes that there is no more reason for making such a document dull and colorless than Bill Nye, who made Laramie famous, felt there was for confining the reading matter of a railway guide to "a wild incontinence of facts, figures and references to meal stations," but desired instead to make a guide on a new plan that would not "permit information to creep in and mar the reader's enjoyment of the scenery."

There is no lack of scenery in the Red Desert, with its mirages and the gorgeous colorings of many shades of red and gray and brown and green and purple and yellow. When one wearies of the high coloring about him, it is possible to look up to the mountains. For there are many snow-clad peaks in Southern Wyoming. One of the most notable granite summits south of the railroad, Elk Mountain, is seven miles in diameter at

its base, and may be seen for nearly one hundred and fifty miles of the journey across the state.

There are gorges and canyons, too, through this favored section—for instance, the gorge of Bitter Creek, near its entrance to Green River, one of the streams that later become responsible for the Colorado, the grandfather of all the canyons. The geologists say that millions of years ago Bitter Creek did some remarkable erosion work, cutting a gorge for itself more than a thousand feet deep through formations that have since been leveled and carried away to form other lands. The government document already quoted again proves its ability to depart from prosaic figures and dry catalogues by saying:

The volume of rock removed by this small stream alone would probably be reckoned in hundreds of cubic miles, and all of it found its way through the narrow gorge to Green River. Hundreds of other streams delivered similar amounts to the same river, and the question may well be asked, What became of it all? Those who have visited the Grand Canyon of the Colorado in Arizona have noted the muddy water of that river and wondered where the mud came from. Some of it came from Wyoming. Those who have visited the built-up plains and filled barriers that mark the ancient course of Colorado River in Western Arizona have wondered where the material came from to fill these enormous barriers. Some of it came from the valleys through which the Union Pacific Railroad is built. Those who have traveled over the Southern Pacific line in Southern California where it crosses the broad delta which the Colorado built out across the Gulf of California so far that the north end of the Gulf—now the Salton Sink—was completely cut off from the main part of the gulf, have wondered where all the sand and silt of that great

ON GREEN RIVER, WYOMING

DEVIL'S SLIDE, WEBER CANYON, UTAH

delta came from. Some of it once rested on the arch of the Rock Springs dome, through which Bitter Creek cuts its way.

The town of Green River looks back from the river on a series of picturesque shale and sandstone bluffs, brilliantly colored, pleasingly stratified and marvelously fashioned in forms that it would be impossible to counterfeit. A study of the bluffs along the river and of isolated natural monuments like the "teapot and cup" will be a good preparation for the examination of Steamboat Rock, or Pulpit Rock, or Jack-in-the-Pulpit, or the Sphinx in Echo Canyon, over the line in Utah, or The Witches, near by, a weird group of pinnacles, some of them as high as one hundred feet, the joint product of wind and rain; or The Devil's Slide, a few miles farther west, formed by the washing away of soft shale from about two parallel upright ledges of limestone, forty feet high, and twenty feet apart.

Many years ago a writer in the *Overland Monthly,* speaking of such strange monuments as these in all parts of the world, that "bear resemblance to the human form or face, or take the shape of some animal," said it would be fitting to apply to them Shakespeare's scene between Hamlet and Polonius, if for "cloud" should be read "rock." Thus:

Hamlet. Do you see yonder rock that's almost in shape of a camel?
Polonius. By the Mass, and 'tis like a camel, indeed.
Hamlet. Methinks it is like a weasel.
Polonius. It is backed like a weasel.
Hamlet. Or like a whale.
Polonius. Very like a whale.

All the traveler needs is imagination when looking at the startling formations of Wyoming and Utah. They represent just what he pleases to call them.

A little while before crossing from Wyoming into Utah the railroad passes through the Aspen Ridge by means of the famous Aspen tunnel. It is possible to pile up a lot of statistics about this bore, more than a mile long, but it is so much more interesting to read the description of the work given by one who has told, as if he really enjoyed the telling, of some of the marvels of railway engineering in the United States:

They struck a mountain that for startling developments broke the records in the annals of American engineering. It was here that the underground stream was encountered, but this was a mere incident among the possibilities in the mountain. . . . To bore a hole through the mountain at a depth of 450 feet from the highest point was not difficult; but the curious thing was that, after being bored, the hole would not stay straight. The mountain, reversing every metaphor and rule of stability, refused to remain in the same position for two days together. It moved forcibly into the bore from the right side, and, when remonstrated with, stole quietly in from the left; it descended on the tunnel with crushing force from above and rose irresistibly up into it from below. The mountain moved from every quarter of the compass and from quarters hardly covered by the compass. Workmen grew superstitious, contractors suffered chills, and engineers stood nonplussed. Starting in huge cleavage planes, the shale became at times absolutely uncontrollable. Wall plates well fashioned into regular alignments at night looked in the morning as if giants had twisted them; 12 x 12 hard pine timbers, laid skin to skin in the tunnel, were snapped like matches by a mysterious pressure. Engineers are on record as stating that in the Aspen tunnel such con-

struction timbers were broken in different directions within a length of four feet. An engineer stood one day in the tunnel on a solid floor of these timbers, when under him, and for a distance of 200 feet ahead of him, the floor rose, straining and cracking, three feet up into the air. Before the tunnel could be finished it became necessary to line over seven hundred feet of it with a heavy steel and concrete construction.

When the Mormon vanguard crossed the mountain they used the route over Aspen Ridge. The one hundred and fifty men and three women in the party had crossed Wyoming by a trail marked out for them by Brigham Young, the leader, close to the Overland Trail, yet diverging from it except at some difficult river crossings and in mountain passes. After crossing the mountains into Utah they followed Emigration Canyon to Salt Lake City.

The route of the railroad to Ogden follows Echo Canyon, whose twenty-five miles became famous in 1857 because here the Mormons prepared to resist the 2500 soldiers sent to Utah by President Buchanan to back his appointment of a successor to Brigham Young as governor, who did not propose to be superseded.

The canyon, whose walls in some places are one thousand feet high, and approach within a stone's throw of each other, afforded a wonderful opportunity for defence. Fortifications were built on the north wall. Breastworks and ditches in the canyon itself were a part of the scheme for holding back the United States troops, whose leader, after the capture of several supply trains by the Mormons, decided to withdraw for the winter to the region of Fort Bridger. Then, in June, 1858, they made their way without resistance toward Salt Lake

City, and were met by messengers who told of submission. One who was in the expedition wrote of the journey:

For miles and miles in the gorges, at the season of the year when they were traversed by the army, the road winds through thickets of alder and willows and hawthorn, whose branches interlace and hang so low, under the load of leaves and blossoms, as to sweep the backs of horsemen. The ridges which the road surmounts between canyon and canyon are covered with fields of luxurious grass and flowers, in the midst of which patches of snow still linger. From these, in the clear noon sunshine, the broken line of the Wasatch and Uintah Ranges is visible along the horizon; but through the morning and evening haze, only the tracery of the white crests can be discerned. The valleys of the Bear and Weber Rivers are particularly beautiful.

From Echo Canyon, where traces of the Mormon fortification of 1857 may still be seen high up on the cliffs, the railroad enters Weber Canyon and leads to Ogden, though the Lincoln Highway goes directly to Salt Lake City. Beyond the canyon lie smiling valleys whose green fields and burdened orchards tell eloquently that Brigham Young was justified when he laughed at James Bridger's skeptical offer of a thousand dollars for the first ear of corn raised in the Zion to which the prophet was leading his people, a region that has been made so gloriously productive that it is one of the marvels of the West.

CHAPTER VIII

FROM THE YELLOWSTONE TO THE GRAND CANYON

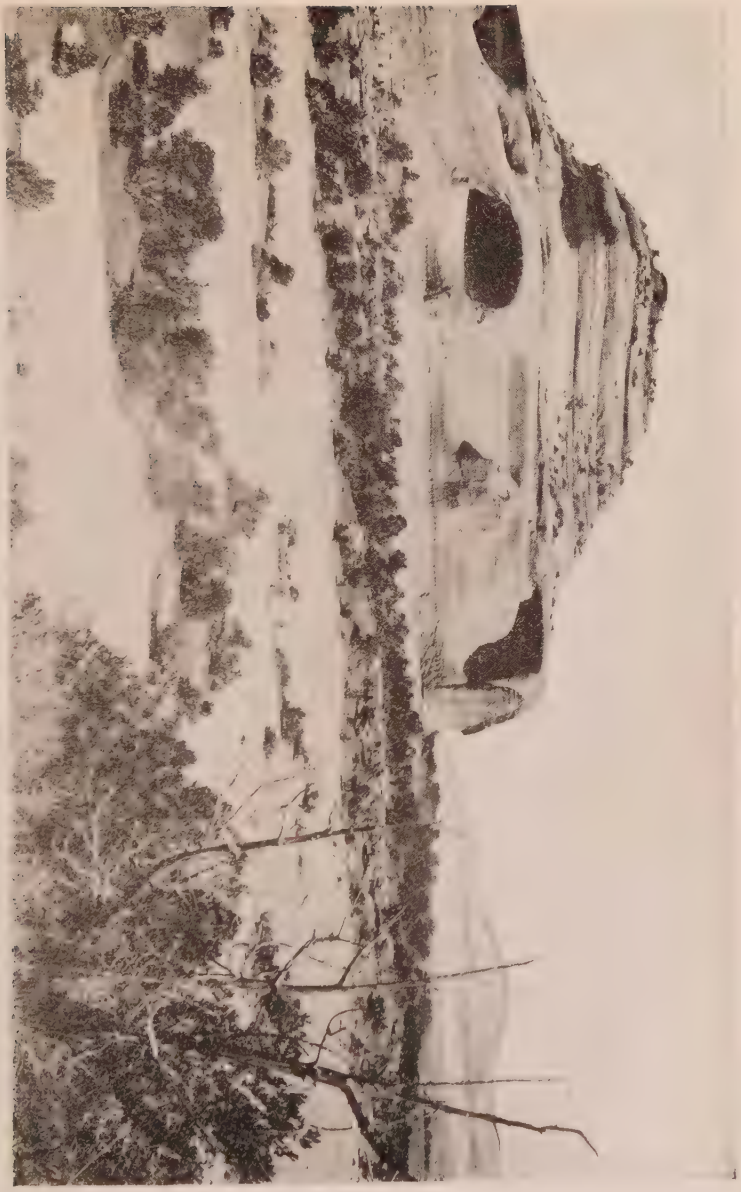
SOUTH of the Yellowstone National Park in Wyoming is the rugged Wind River Range. There hardy hunters of the horned mountain sheep and the lordly elk have learned to turn their steps, and there those who would have the even more satisfying experience of becoming familiar with the hidden recesses of the haunts of these animals turn from the beaten track and revel in the wild glories of lofty mountain and lovely valley.

But it is not so long since these secluded regions proved all but unconquerable to the adventurous explorer who ventured to solve their problems. In 1833 Captain Bonneville came this way, but he soon learned the folly of trying to conquer the Wind River Range. Before long he was lost in the labyrinths of the mountains. After many attempts to escape he resolved to ascend the range with one of his men. Washington Irving says that "after much toil he reached the summit of a lofty cliff, but to behold gigantic peaks rising all around, and towering far into the snowy regions of the atmosphere. He soon found that he had undertaken a tremendous task. . . . The ascent was so steep and rugged that he and his companions were frequently obliged to clamber on hands and knees with their guns strung on their backs. Frequently exhausted with fatigue and dripping with perspiration, they threw themselves upon the snow, and took handfuls of it to allay their parching thirst. At one place they even stripped off their coats and hung them on the bushes,

and thus lightly clad proceeded to scramble over those eternal snows. As they ascended still higher, there were cool breezes that refreshed and braced them, and springing with new ardor to their task, they at length attained the summit."

Fed by the melting snows of the mountains that caused Captain Bonneville and his companions so much tribulation, the Green River begins, not far from the central point of the range, the marvelous course that leads almost directly south through Wyoming and Utah to its junction with the Grand. Before their union both rivers pass through a succession of awe-inspiring canyons. After they form the Colorado it looks as if the canyon-forming propensities of both streams increase in more than arithmetical progression. Canyons become chasms, and the grandeur of the river's setting becomes more stupendous as the course toward the southern boundary of Utah is approached.

Because Green River and its continuation, the Colorado River, are far from being highways except for the most venturesome, it may seem useless to say much of their scenic wonders. Yet they are the most remarkable features of a state which, without them, would still have endless treasures to offer the indefatigable sightseer. There are those who have dreamed of a Denver, Colorado Canyon and Pacific Railway that would open up the mysteries of the canyons. What a wonderful trip could be made on a route that, after following the Grand River by the Denver and Rio Grande Railroad, should cling to the bank of that stream to its union with the Green, and then along the Colorado into the region of Southern Utah which, even as late as 1868, was indicated on the map of the War Department as territory abso-



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lutely unknown, and which is yearly yielding fresh surprises to explorers who penetrate more carefully into side canyons, plateaus and mountain ridges!

Even now the wonder rivers may be approached, with greater or less ease, at various points. The Union Pacific Railroad crosses the Green at Green River Station, the starting point of the very few expeditions of exploration of the river to its mouth, and an easy portal for the hunter, the sportsman or the tourist who is in search of the unusual. Then the Denver and Rio Grande Railroad crosses the stream some three hundred miles south by river, at Green River, Utah, a town in the midst of what was once a desert, though now it is a garden. Between the two Green Rivers are other points of approach, notably the Dinosaur National Monument, not far from the point where the river reënters Utah after being forced into Colorado by the Uintah Mountains.

There are several comparatively easy approaches to Dinosaur Monument. The Pike's Peak Ocean to Ocean Highway passes through Vernal, Utah, and from Vernal there is a good auto road to the government reservation. Those who travel by train can make stage connection for Vernal from Helper, Utah, or railroad and stage connection from Mack, Colorado, both stations on the Denver and Rio Grande Railroad.

Eighty acres have been set apart at Dinosaur National Monument, including Dinosaur Peak. Embedded in the rocks of the mountain are countless bones of the gigantic dinosaur, of which many have been removed by scientists on the staff of the Carnegie Museum at Pittsburgh. As one result of their labors there is at the Museum a restored skeleton one hundred feet long and twenty feet high. It is worth the ride from the railroad to see the absorbingly interesting process

of blasting these priceless relics from the stone in which they have been embedded, since that age long gone when in the language of a government bulletin, "many dinosaurs and other prehistoric animals must have floated down some ancient river, from a source unknown, and become embedded in a sand bar; there they lay for countless years until they were covered to a great depth by the sand. Then came a seismic upheaval which forced the sand bed among the mountain tops."

Those who push on a few difficult miles farther east will come to Lodore Canyon in Green River, so named by the first explorer, Major J. W. Powell, in 1869, because its waters come

"Turning and twisting,
Around and around
With endless rebound!
Smiting and fighting,
A sight to delight in;
Confounding, astounding,
Dizzying and deafening the ear with its sound."

For twenty miles Lodore is a bewildering series of marvels:

"It starts abruptly at what we have called the Gate of Lodore, with walls nearly 2000 feet high, and they are never lower than this until we reach the Alcove Brook, about three miles above the foot," was the description Major Powell gave of the canyon. "They are very irregular, standing in vertical or overhanging cliffs in places, terraced in others, or receding in steep slopes, and are broken by many side gulches and canyons. The highest point on the wall is at Dunn's Cliff, near Triplet Falls, where the rocks reach an altitude of 2700 feet, and the peaks a little way back rise nearly one thousand feet higher. Yellow pines, nut pines, firs, and cedars stand in extensive forests on the Uintah

Mountains, and, clinging to the rocks and growing in the crevices, come down the walls to the water's edge from Flaming Gorge to Echo Park. The red sandstones are lichened over; delicate mosses grow in the moist places and ferns festoon the walls."

Echo Cliff marks the end of Lodore. Frederick S. Dellenbaugh, who went through Lodore in 1871, said that the name was given to the park-like opening "because from the smooth bare cliff directly opposite our landing a distinct echo of ten words was returned to the speaker."

In the interval before the next canyon to the south are two towns, Jensen, surrounded by fruitful lands, and Ouray, where Indians flock for supplies. Not far from Jensen begins Desolation Canyon, ninety-seven miles long, where Major Powell had his hands full giving names to formations, pinnacles, cliffs and other objects of which he was the discoverer. The Land of the Standing Rocks and the Butte of the Cross were two of his christenings that persist to this day.

Canyon follows canyon. The walls become more rugged, the country along the river more desolate. Tributaries enter through canyons of their own, among them being the White Canyon, where is located the Natural Bridge National Monument, on the San Juan River, to the north of the Rainbow Bridge National Monument. Both of these monuments may be approached most easily from Mesa Verde National Park, Colorado, as already described. Between them is a trail that affords an opportunity one hundred and sixty miles long to wander among the mysteries of a land speaking eloquently of the past; it becomes difficult to realize that one is only a little distance from all the refinements of civilization.

CHAPTER IX

FROM THE CITY OF THE SAINTS TO ZION CANYON

"YOU won't like the trip from Salt Lake to Lund," a fellow-passenger said, as he noted the destination marked on the author's ticket. "It is hot and dusty and monotonous. You'll be glad when you get there; and you'll never want to go again."

He was mistaken. Most of the way there was little or no dust. In spite of the fact that another passenger gave kindly warning that the umbrella which had been a part of the author's equipment thus far would not be needed in the south country, the rain soon began to fall and for three days he successfully dodged copious showers that fell all about him. Sometimes there were patches where no rain had fallen for some time, but such minor matters as heat and dust are forgotten by those who rejoice in the comradeship of mountains, the friendship of meadows, and the warm chumminess of the desert. How could such a combination be called monotonous?

Down through the valley of the Jordan leads the inviting Arrowhead Trail, as well as the Los Angeles and Salt Lake Railroad, the favorite system of the Los Angeles photoplay companies because it points the way so quickly to scenes of marvel and surprise, and because its officials are singularly accommodating in providing facilities for photographing runaway cars, fleeing train robbers and agile telegraph operators with coquettish curls.

There are no valleys like the Jordan Valley and its

successors to the south. On either side are peaks snow-capped until far into the summer. From these sweep down refreshing breezes to temper the heat, and life-giving waters to fill the canals that make the region a bower of beauty and a garden of surpassing fertility.

These lofty mountains, whose rugged, serrated summits are so clearly outlined against the deep blue of the Utah sky, look down benignantly on inviting orchards, on prosperous looking farms, and on clustering villages where Mormon temple and modern school divide architectural honors.

At intervals that become more frequent as the train moves southward appears land that needs only water to make it a part of the surrounding garden. Here and there the lower summits crowd close and the eye turns across the valley to the mountains on the west, resting with delight on the marvelous rows of Lombardy poplars that make the plain seem like the plaything of some giant who has placed his arbors as a child builds with his blocks.

But the closing in of the mountains is only a threat. Once again the valley spreads out on either hand, and the precious waters flow through the ditches to the waiting fields, some of these the property of hardy men who live in log cabins of the pioneers; others yielding their fruits to those whose prosperity is marked by cosier farmhouses, or, it may be, by homes in centers like Lehi, American Fork, or Provo. These towns in Utah Valley have the double advantage of mountains on one side and Utah Lake on the other—a lake whose size and beauty would command more attention but for the larger and more spectacular Great Salt Lake to the north.

Even after the first fertile valleys end and the desert begins there is more of life to follow. For, as the railroad and the highway cross a barren stretch where the soil is red and the slopes are forbidding, Sevier River meanders near by and prepares the traveler for the sight of the new beet-sugar country around Delta and Oasis and Black Rock. Here artesian wells go into partnership with the river, fitting the ground for the production of sugar beets "that weigh as much as nine pounds each," according to the boast of one hopeful homesteader whose lands just now are without the watered area, though he is looking forward eagerly to the time "when the government will help us out as it has helped others." Then he added, "The day will come when the country beyond the Beaver Mountains, with Sevier Lake in its midst, will be as rich as the Utah Valley."

Below the new beet-sugar country, in the Escalante Desert, is Lund, the railroad gateway to Zion Canyon, one of the youngest—and destined to be one of the most popular—of all the National Parks. One hundred and five miles of stage road is the connecting link. A single automobile is usually able to carry all applicants for transportation to this hidden marvel in the mountains of Washington County, east of the Dixie National Forest, and perhaps one hundred delightful miles above the northern border of the Grand Canyon, of which it is really the first cousin. And there are not lacking those who say they get more real joy from the little cousin than from its majestic relative.

Some day there will be a railroad to Cedar City, or even to Zion itself. But those who wait until then to visit the canyon will lose a rare treat; it is difficult

to imagine a more varied and pleasing ride of like distance. For the author this pleasure was intensified. Dependable arrangements have been made for the through transportation of passengers, but in consequence of an error of his own he was dependent on a succession of stages, the driver of a load of alfalfa, and the car of a genial driller who is helping to put to the test the insistent belief that this favored district is as rich in oil as it is in mountains of the finest iron ore and in other varied minerals. "Watch us when the railroad comes," the residents say.

The iron deposits are within Iron Springs Gap, where is a famous spring that has meant life to many a desert traveler. "There are fifteen miles of iron from north to south, and the field is eight miles wide, the largest known undeveloped deposit in the world," the claim is made locally.

To-day sheep graze by tens of thousands near these iron mountains. In fact, the entire country is a favorite with the sheep raisers, and, in the season, huge trucks, wool-laden, cross the mountains and the desert to Lund. The large ranch near the Gap contains ten thousand acres; for this, including water rights, the proprietor paid thirty thousand dollars.

In rapid succession the road leads among mountains and past ravines that might almost be called canyons, through Mormon villages, among the famous vineyards of Toquerville, along and across the great Hurricane Fault stretching away some two hundred miles, which has long been to the geologist a favorite subject for speculation. A two-hour wait at La Verkin Forks for a promised automobile that never came gave opportunity for a long study of a landscape of infinite variety.

Bare desert, where jack rabbits leaped and quail darted across the road, and where were the ravishing cactus blooms, some white, some yellow, but most of them of a strangely beautiful red; the two clustering villages on the Virgin River, La Verkin and Hurricane, with watered fields and orchards of vivid green; above Hurricane the black rocks that mark the location of Hot Sulphur Springs, the favored resort of the young people of the district; far to the south the uplands whose dark colors are emphasized by the strange Fort Pierce Sands, square miles of these, blood-red, as distinctly set off from the surroundings as is a field of wheat from the roadside.

Then came the six-mile ride on the load of alfalfa, much of it up, up, still up the slope above the valley on whose edge is La Verkin by the Virgin. It was not easy to accept the cordial invitation of the homesteader who sat atop the hay—it seemed too bad to add to his load; but it was not possible to decline. And what a view was spread out as the slow-moving wagon gradually climbed toward Virgin! No automobile could move slowly enough to give to its passengers the joy of that half hour of hill climbing.

Hospitality is a characteristic of the homesteaders and the dwellers in the villages of Utah. "I may not have much, but what I have is yours," one of them said. "May I use your telephone?" the query was put at one door. "You bet!" was the quick reply. "May I ask for a drink of water?" brought the same smiling answer, and "You bet!" was the response to the plea of a belated traveler to be kept for the night in a village home.

ZION CANYON, UTAH. FROM HICKS' POINT

A most painstaking honesty is another characteristic of the people. When he was building the camp in the Canyon, Mr. W. W. Wylie—whose name is well known to tourists by reason of his long connection with the Wylie-Way Camp of Yellowstone Park—had a most refreshing experience of this. A carpenter who had been working for him presented a bill that was less than had been expected. Mr. Wylie asked for an explanation. "Well, there were two days when I did not work full time," was the reply. "One day I got to talking with you, and before I knew it two hours were gone. Then another day a man came up to see me, and I had to take out an hour for the visit."

The last stage of the ride to Zion, from Virgin village, rapidly unfolds a panorama for which descriptions that in advance seemed fulsome and extravagant are seen to be inadequate. There is the stream, wandering here and there in the broad valley; the strangely-shaped, brightly-colored mountains on the right which change like living creatures at every turn; the towering peaks and ridges on the left, and above them all the inaccessible summit of Steamboat Mountain with a long, mesa-like hood rising above the precipice. A visitor to Zion in the summer of 1918, learning that this mountain had never been conquered, declared that no mountain could vanquish him. He was a former mountain climber; but he was at length compelled to own his defeat.

Near Springdale, the last of the old Mormon villages passed through on the way to the Canyon, is the real beginning of Zion National Park. The valley narrows, and the formations become more startling in contour, more marvelous in coloring. To the left leads the tributary Parunoweap Canyon, where cliff dwellings

are accessible. But the chief lure is onward to the main valley which the Indians called Mukuntuweap, though when Brigham Young opened the way for the early Mormons to go to this secure hiding-place in the mountains he called it Little Zion—its majestic rocks, its massive walls, its sublime summits made it seem like a little heaven. The pioneers made their homes in the canyon, and they tilled fields along the borders of the Rio Virgin. They constructed their canals for irrigating the land, and they lived happily there until the decreasing vegetation at the headwaters of the stream caused floods that washed away much of the fertile ground. Then they began to move down to the broader valley. The fame of this canyon as a pleasure resort spread, and in 1917 it was made a National Monument. In 1919 it became a National Park.

Mr. and Mrs. W. W. Wylie are the pioneers who are doing for this crowning glory of Utah what they did for the Yellowstone Park. In 1917 they opened their comfortable camp and began to welcome the fortunate people who were able to come to this out-of-the-way spot. An examination of the camp register for 1917 shows that about three hundred visitors stopped here; most of these were from Utah and California, though some came from the East. In 1918, when war conditions called for a curtailment of vacation travel, perhaps one hundred, in all, registered, and most of these lived near by. In 1919, with the lifting of travel restrictions and with ample provision for the comfort of the visitors both on the way to the canyon and within its borders, the tide of tourist travel increased. The day must come soon when thousands instead of scores will respond to the lure of Zion and will return home with

tales that will lead other thousands to seek this valley of marvels. For, while these marvels cannot well be compared with those of the Grand Canyon, the Yosemite, or the Yellowstone, they are finding enthusiastic friends who say that if they were given a choice of a second visit to any of these other resorts, or a return to Zion, they would hasten Zion-ward.

In Utah itself the Canyon was all but unknown for many years. Even many of those who lived near by did not think that it amounted to anything. Mr. Wylie tells of a man who has spent his fifty years within a few miles of its borders. "Somehow I didn't look at these things you talk so much about," he said, "but now that you have called my attention to them I think they are kind of worth while after all." So a Mormon bishop at Springdale recently said that he had always thought of the mountains and rocks as barriers, nuisances and hindrances. "Now I see that there is something more to them," he owns.

It is fortunate that visitors are brought to Zion in the evening, when they are too weary to wander about. The vision afforded by the ride of a few miles from the gateway is enough for the first evening. Then comes the night in a comfortable bed, the lullaby being the sound of the flowing waters of the Virgin and the dropping of the blossoms from the clustering trees about the camp. In the morning early the pleasure ground in which one walks with reverent heart is ready to give its first and most lasting impression. If the day is bright—and it usually is—the sunlight is playing on the face of the western wall; the sun itself does not appear until from ten to eleven. All day, however, the canyon is light, for in the late afternoon the eastern

wall reflects the sun's rays, and in June and July a newspaper can be read near the Virgin's brink, even as late as nine o'clock. If, however, the rain is falling, water will be pouring over the face of the precipices, making cascades that surprise at every turn.

The camp is placed in one of the broadest parts of the valley, where it is possibly a little more than a quarter of a mile from wall to wall. These walls are one at the base, but are cleft higher up. The sky line is broken in a pleasing manner. The form of the cliffs is varied, and the glowing coloring changes from dawn to dusk.

From the camp meadow the road is practicable for automobiles for a short distance only, but some day soon the way will be open for them five miles farther, to the point where the walls come so close together that there is no passage except for those who take to the water. In the meantime visitors have the choice of relying on their feet or of taking the saddle horses provided. The more primitive method of transportation is much more satisfactory than any automobile can be, for the pace of the animal is just slow enough to afford the necessary leisure to look and look and look again. On the open road five miles may be made on horseback well within an hour; but in the canyon who wants to travel at such a rapid rate? The wise visitor is content with a mile or two an hour as he wanders along the trail, fords the Virgin at perhaps a score of easy crossings, with the water seldom above the horse's knees, or alights to spend an hour in one of the amphitheatres where the canyon twists and the mighty walls look down everywhere—except at one point, hidden so well that the visitor feels at first there can be no outlet.

In one of these amphitheatres is Weeping Rock, an overhanging precipice from which are always dripping waters that force their way through from the bottom of a lake in the summit of the precipice, two thousand feet above. In time of flood the lake seeks an outlet over a natural dam, near the verge of the cliff, and pours over the rock to the valley below in a cascade of stupendous proportions.

A little farther on is another amphitheatre, called the Temple of Sinawawa. Here, so tradition runs, the Indians used to gather—in the daytime, that is; they were afraid to be found by night in this temple of the god whose stone image stands out close to one of the walls.

It is to be hoped that the parsimony which so far has characterized the handing out of names to the more prominent formations in the canyon will continue. A few names in such a place are pleasing; but let Zion Canyon be spared the fantastic nomenclature that gives to insignificant features high-sounding titles and to some of the most glorious marks of God's majestic handiwork imaginary descriptions that would make the sublime ridiculous.

Among the few names that have been given is The Great White Throne. Possibly the reader may object to that name, but when he views this outstanding formation, which rises nearly three thousand feet above the valley—itself some forty-five hundred feet high—he will be apt to feel that no other name would fit this stupendous white monolith which commands the canyon for miles. The twists and turns of the water-shaped, wind-worn walls afford many points of vantage from which this inspiring precipice can be seen, and it is difficult

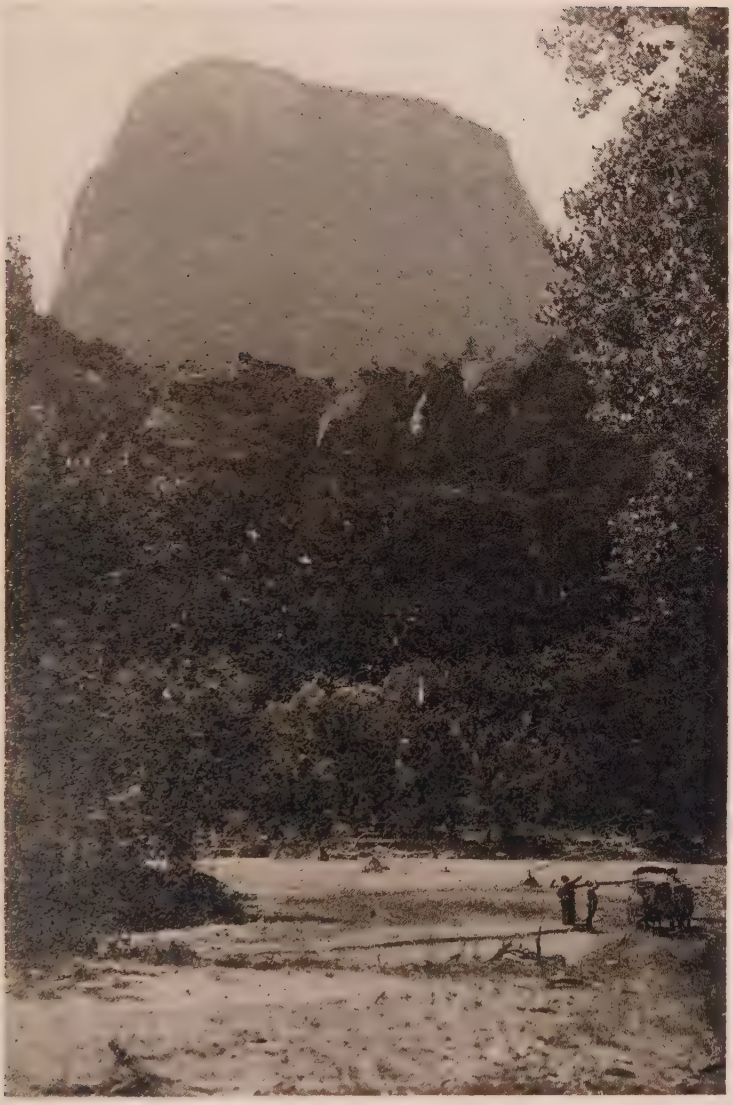
to choose which is best; they are all so different, and they are all so tremendously effective.

When one hears the name "Angels' Landing," he is apt to think the reference is to a landing place on the river's brink. But no! the brink referred to is the summit of a lofty, many-colored formation "where no one could make a landing unless he had angels' wings."

The walls are inaccessible at most points, but a daring frontiersman has found his way to the summit of one of the most inspiring rocks, twenty-seven hundred feet high, and is marketing for the valley and the villages below the rich timbers of the heights. It would be a long and almost impossible haul from the top around to the valley, so wire cables with a frail looking car have been stretched from the summit to the floor of the canyon. By means of the car timber is lowered, a few planks at a time, and supplies are raised to the workmen. Until several years ago venturesome visitors made the ascent by wire, but the trip is so dangerous that it has been forbidden.

Beyond Cable Mountain the winding pathway leads between the precipices until the walls are only about a hundred feet apart. Half a mile farther on it is possible to touch both walls with the outstretched hands. And two thousand feet above is the narrow strip of blue sky!

The difficulty of approaching this awful chasm did not deter one company of young men who, in the summer of 1917, made their way out from Cedar City over the rugged mountains, on foot, to a spot where they could enter the Virgin, about seventeen miles above Wylie Camp. From there they waded or swam to the present limit of horseback exploration. "We were in the water



THE GREAT WHITE THRONE, ZION CANYON, UTAH

THE BREAKS OF CEDAR CANYON, UTAH

IN ZION CANYON, UTAH

nine hours," one of the men said to the author. "But it was worth it. I want to make that trip again."

Even if a visitor has been privileged to spend a week in exploring the fastnesses of Zion Canyon and sitting under the spell of its mysteries, he is reluctant to leave. Yet when he is compelled to put the canyon behind him there are more joys before him. There is the ride back to Lund, and it is startling what a wonderfully different aspect a mountainous country presents when it is viewed from a new angle! Hurricane Fault it there, but it seems like a stranger; canyons and villages, gardens and orchards, mountains and deserts, have all been seen before. But who would believe it!

And Zion Canyon is but one of the superb offerings of this mysterious region of Southwestern Utah, where every year fresh discoveries are made by men who cannot resist the lure of the open. R. D. Adams, a Cedar City photographer, recently penetrated to the recesses of Cedar Canyon where not even a pack-horse can secure a footing, and found a great natural bridge that has since been seen by a number of others. With a companion he explored the Breaks of the Cedar Canyon, visiting two of the score or more side canyons which extend in a jagged semicircle for a distance of twelve miles. The editor of the *Iron County Record* declares that a view of the Breaks from the rim of the basin is one of the most fascinating sights to be found anywhere. "Because of the gorgeous and varied coloring, the fantastic, fairy-like pinnacles, the spires, and other formations, it has the appearance of an enchanted country that has been made to slumber through the centu-

ries, and, like the ashes on the mantle of a gas lamp, needs only a breath of wind to make it vanish into space."

Soon there will probably be a well-built highway up Cedar Canyon to the country of the Breaks. For Cedar City is on the route from Northern Utah to Los Angeles, which will connect with a practicable road to the Grand Canyon and on to the Monumental Valley of San Juan County, with its great natural bridges, and even to the Mesa Verde National Park in Colorado.

CHAPTER X

GOD'S AUTOGRAPH IN STONE

THE GRAND CANYON OF THE COLORADO

WHEN one speaks of a task that is all but impossible, he is apt to say something about making bricks without straw, or the Labors of Hercules, or the Stone of Sisyphus, or reading the riddle of the Sphinx. But one who has seen the Grand Canyon of the Colorado has no more use for such figures. Should it be desired to set a task that cannot be performed, it would be sufficient to say, "Write a description of the Grand Canyon of the Colorado."

Many times the writer has thought he would try to tell what he saw when first he stood on the brink of the great chasm cut in the Arizona Plateau by the waters of the Colorado, but at each attempt his hand has been stayed. In memory he looks once more on the awe-inspiring vision that was spread before him one never-to-be-forgotten day in May, and again, as then, the tears are not far away, the voice will not do his bidding. He can only think, "God!" When speech is possible, all he can say is "God!"

Some one has called the Grand Canyon "God's autograph in stone." The visitor cannot appreciate the words until he gazes in amazement and awe at the unmatched spectacle that silently waits for the millions who have never dreamed that their own land contains the greatest natural wonder of the world.

Would you understand why the only normal person who can write about the Grand Canyon without a quick-

ening of the pulse and a despairing feeling that he had better turn to some other subject is the person who has never stood on its rim or followed the tortuous trail down the precipice to the river's brink? Go to the Grand Canyon! Would you draw nearer to God than ocean or lake or mountain has drawn you? Go to the Grand Canyon! Would you know more of the almighty power of Him who holds you in the hollow of his hand? Go to the Grand Canyon! Would you have made more real to you the stupendous sentence, "In the beginning God created the heavens and the earth"? Go to the Grand Canyon! The visit will strengthen faith, inspire with new zeal, and bring fresh meaning to life.

Think of passing in a moment from a level plateau where there is nothing especially striking in the landscape to a chasm more than a mile deep and thirteen miles to the opposite rim; the distance does not seem so great, but the air is rare and clear, and what seems near is often far away.

Think of this chasm filled with mountain peaks, not one of which reaches above the level of the feet. Think of these mountains carved in shapes fantastic, weird, grotesque, magnificent.

Think not of somber-hued, rocky slopes and precipices, but of color schemes that are the delight and the despair of the artist—every shade of red and violet combined and contrasted until the canyon looks like a vast palette. Think of gazing on rocks and pinnacles and turrets that seem, to use the expression of one traveler, as if a million sunsets had been shattered there. Think of gazing on a thousand square miles of such wonders without moving to a fresh point of vantage.

And when at length the awed observer stands and looks into the depths, and across to the farther wall, and picks out one by one the ten thousand castles and palaces and cathedrals between, he will be apt to think: "I did not expect anything like this. How could anyone ever think of describing it?" He may feel like echoing the words of a visitor who came carelessly, but stood spellbound at the edge of the abyss, and cried, "My God, there it is!" or he may look on in silence while the tears come unbidden, tears of which he will not be ashamed; he may feel with John Muir that "the prudent keep silence at this spectacle;" but whatever he says or does not say, he will know that God has given him a glimpse of His glory, and he will feel that he has just begun to live.

It matters little where one takes his stand. He may pause in front of the palatial hotel which the railroad has pitched on the brink, at the entrance of the branch line from Williams, Arizona, or he may go along the rim to the right or to the left; everywhere will be the vision glorious.

It matters not what the time of day or night, or what the state of the weather; the scene spread will be different, but it will always be so abundantly worth while that the beholder will thenceforth have new standards of beauty and color and glory.

When the sun shines in a cloudless sky, the monumental structures in the canyon dazzle and bewilder, and one is glad to look at a point where the shadow of some majestic mountain rests the eye. When clouds float in the sky, the rapid play of light and shade on peaks and walls and bowlder-strewn slopes fills one with delight.

In time of storm, when the rain falls in torrents, the

canyon seems like a new world. In the early morning, before the mists have risen from the river and the heights above, it is even more like a fairyland than in the daytime.

Many prefer to gaze when the moon only half defines the depths, and it seems that it is but a short distance to the river below, or the farther wall of the chasm.

But, whenever the look is taken, the heart seems full to bursting. It is not easy to realize that the river, whose waters have cut their way from the surface of the plateau, is fully five miles from the brink in a straight line. It is still more difficult to believe that what seems like a mere thread of silver is really a turbid, angry torrent feared by the Indians, and conquered by only a few daring explorers.

One of these, who conducted an expedition in 1889, has told of his wildest ride on the river. "The canyon was so narrow, the turns were so quick and sharp; the current was rushing first on one side and then on the other, forming whirlpools, eddies, and chutes (for the river by a sudden flood had risen some twelve feet). Our boats, caught first in one and then in the other, now spun round like leaves in the wind, then shot far to the right or left almost against the wall; now caught in a mighty roll, and first carried to the top of the great wave, and then dropped into the trough of the rear with a force almost sufficient to take one's breath."

It was more than three hundred years after the discovery of the canyon by the Spaniards in 1540 before an expedition braved the unknown perils of the stream, a mighty river two thousand miles long, draining three hundred thousand square miles, and passing for two

SANDSTONE CLIFFS NEAR PEACH SPRINGS, ARIZONA. CLIFFS ON NORTH SIDE OF GRAND CANYON IN THE DISTANCE

VIEW NORTHEAST ACROSS THE GRAND CANYON, ARIZONA. FROM ZUNI POINT, EAST OF GRAND VIEW POINT

hundred and seventeen miles in the depths of the canyon of its own making.

The most complete exploration made up to that time was that of Major Powell and his party in 1869. Three months were spent in traversing one thousand miles of water. Three of his nine men lost their lives, but it was not the river that destroyed them. The terrors of the passage through the canyon became too great for them, and they left the party and climbed to the plateau. There they were discovered by Indians, who would not credit the tale that they had come down the river in boats. Thinking that they were being deceived, they put the intruders to death.

While tourists cannot yet undertake the passage of the treacherous river, they can find their way down the side of the canyon to the edge of the stream. There are a number of more or less difficult trails. Perhaps the most famous of these is Bright Angel Trail, down which guides conduct tourists on donkey-back. Eight hours are required for the round trip.

Those who do not feel equal to this somewhat fatiguing trail trip can walk or drive along the river, seeking points where the canyon can be seen to advantage. One of the best of these is fortunately readily accessible by automobile road through the Coconino Forest. This is Grand View Point, from which one can see the elbow formed by the turn of the river from the north to the southwest. Here the distance is more than twenty miles to the opposite rim of the canyon, and spread before the eye is a vision beside which the glories already seen seem small. Yet it is not right to use that word. As if anything in the Grand Canyon could be called small!

The view upstream and downstream gives a better

realization than would otherwise be possible of the fact that the chasm is not a single canyon; it is made up of many canyons which intersect one another until the result is like a labyrinth. In this labyrinth hundreds of the natural wonders at which travelers marvel might be deposited, and they would be lost unless one should search for them diligently. Even when found they would be so dwarfed by the majesty around them that they would excite no comment.

This is the Grand Canyon of the Colorado which "flashes instant communication of all that architecture and painting and music for a thousand years have gropingly striven to express." This is the crowning glory of American scenery, "a paradox of chaos and repose, of gloom and radiance, of immeasurable desolation and enthralling beauty. It is a despair and a joy, a woe and an ecstasy, a requiem and a hallelujah, a world ruin and a world joy."

The author asked his guide whether he ever longed to get away from the chasm. Pointing to a distant spot on the river, he said: "I was born there. I have lived here all my life. I have gone down into the depths, and have crossed the stream that looks so little from here; I have stood with hundreds of parties on this point, and have talked with them of what they could see. But I never weary of it."

A second query was put to him, "What does the canyon say to you?"

He hesitated. Then, in a subdued tone he replied, "It tells me of God."

CHAPTER XI

ALONG THE WESTERN BORDER OF ARIZONA

FROM Green River, Wyoming, to the western limit of the Grand Canyon, the Green and Colorado Rivers descend more than five thousand feet. The further descent of the Colorado from the mouth of the Virgin River to the Gulf of California is more than eight hundred feet. This section of the stream is usually looked on as comparatively quiet by tourists who cross it on the Southern Pacific at Yuma, or even on the Santa Fé at Needles. Indeed, if the entire stream were like the sections seen at these points the suggestion made in 1806 by Colonel Zebulon Pike would not seem so far wrong; after his visit to the vicinity of Pike's Peak he suggested what he thought was a solution for the problem of easy communication between the plains and the Pacific Ocean. The route he suggested was by water, except for about two hundred miles; pioneers were to be asked to ascend the Arkansas River, then cross over to the Colorado River and descend its waters to the Gulf of California. Evidently he thought that the course of the Colorado was much like that of the Arkansas. It did not enter his mind that between its source in Colorado and its exit to the sea the Colorado presented more majestic difficulties than any other river in America.

It was not long, however, until other explorers began to tell stories of a river lost in a great chasm, of a tremendous fissure in the earth's surface of which the Indians spoke with awe, of mysteries that baffled description, yet lured the investigator.

Finally the United States authorities determined to make the river give up its secrets. Expeditions were organized to explore the stream. The easiest way seemed to be to attack it from the mouth, for there, and for more than a hundred miles, it seemed to be as well conducted and self-respecting a river as others on the continent.

In 1857 a party under Lieutenant Ives was commissioned to ascend the Colorado and map its wanderings. It was known that he would have difficulties of shallow water, rocks and cataracts to contend with, and a curious steamer was constructed for him which, it was thought, would enable him to go far toward the source. This vessel, called the *Explorer*, was fifty-four feet long, and had a stern wheel. The hull was open amidships. The boiler occupied one-third of the vacant space. There was a little deck at the bow; on this was a four-pound howitzer.

The strange vessel attracted the attention of the Mohave Indians, who lived along the river. Once the historian of the party wrote: "All day the Indians have followed us, examining the boat and its occupants with huge curiosity." The children were a fascinated feature of the observing parties. "Their delight to-day has been to mimic the man at the bow who takes the soundings; every call being echoed from the bank with amazing fidelity of tone and accent."

The government document in which Lieutenant Ives described his expedition is anything but dry and prosaic. His way led through natural features whose strange sublimity is perhaps unparalleled in any part of the world. "At every instant the scenery became wilder and more romantic," he said. The rocky banks became

higher; finally they became cliffs, then precipices. The water swirled and rushed in eddies and cataracts that threatened the boat at every instant. The canyon became so deep that it was like dusk at midday. The wondrous colorings of the rocks caused amazement.

The Needles were so named by Lieutenant Whipple. Beyond he saw the Mohave Canyon, where "a low purple gateway and a splendid corridor, with massive red walls, formed the entrance to the canyon. At the head of the avenue frowning mountains, piled one above the other, seemed to block the way. An abrupt turn at the base of the apparent barrier revealed a cavern-like approach to the profound chasm beyond. A scene of such inspiring grandeur as that which now presented itself I have never before witnessed. On either side majestic cliffs, hundreds of feet in height, rose precipitously from the water. As the river went through the narrow entrance every turn developed some sublime effect or startling novelty in the view. Brilliant tints of purple, green, brown, red, and white illuminated the stupendous surfaces and relieved the sombre monotony. Far above, clear and distinct upon the narrow strip of sky, turrets, spires, jagged statue-like peaks and grotesque pinnacles overlooked the deep abyss."

Some distance farther on the river leads through the Black Mountain, by a canyon the deepest and most mysterious yet seen. Just before entering this, in the rapids, the explorers struck a sunken rock. "For a second the impression was that the canyon had fallen in," Lieutenant Ives said. "The concussion was so violent that the men in the bow were thrown overboard. The person who was pitching a log into the fire, went

half-way in with it; the boiler was thrown out of place, the steam pipe doubled up, the wheel-house torn away."

Slowly and painfully the voyage was continued along the entire western border of Arizona, to within a short distance of the place where the Virgin River meets the Colorado, the place where tourists from the north who do not mind a bit of hardship come down from Salt Lake City, through the Little Zion section, for a view of the canyon that many think exceeds in grandeur anything offered from the more easily accessible southern rim of the Grand Canyon.

The route taken by the visitor from the North is much the same as that outlined by Lieutenant Ives as a part of the route for the transportation of supplies to the military forts in Utah. To discover this he had been sent up the river. By the adoption of this route up the river and then by land to Great Salt Lake seven hundred miles would be saved over the all-land route.

When he had made his observations, Lieutenant Ives reluctantly turned from the river "whose strange sublimity is perhaps unparalleled in any part of the world," a region, in the words of another pioneer explorer, "more difficult to traverse than the Alps or the Himalayas." Then he added that by a study of this region "a concept of sublimity can be obtained never again to be equaled on the hither side of Paradise."

CHAPTER XII

THE ROMANCE OF THE SALTON SINK

THE students of geology, fascinated by the records that may be learned by those skilled in the science as they interview mountains and rocks and plains and canyons, have been known to wish that they could have lived in an age when some of the things were going on. But the geologist replies that to-day many similar changes are in progress, yet it is impossible to measure them because one year or even one hundred years sees little advance in a movement that, measured in some future age, may seem immense.

Yet it is possible to refer the curious to a region where some of the processes of geology, usually age-long, have been compressed into a few years. This region is from Yuma westward across the great depression in Southern California, known as the Salton Sink. Here, since 1904, have taken place earth-building and earth-destroying events that are a picture in miniature of other gigantic processes of geologic time. And who dares prophesy that, even within a few years, similar occurrences will not destroy the fertile lands of the valley to the west of the Colorado, whose waters, now forced to do the will of man, ever threaten to have their own way again? Those who travel from Yuma westward by the Southern Pacific will cross this region of romantic history.

For ages the great river has been busily building and destroying all along the lower section of its erratic course. Time was when the Gulf of California reached

to the north about to the point where Yuma is now located. As the Colorado brought down billions of cubic feet of soil, this was deposited at the mouth, and the gulf was gradually pushed much farther south. West of the river an arm of the gulf extended to the north, but this, too, fell a prey to Colorado silt; a natural dam was thrown across this arm of the gulf. Of course the result was a salt water lake. Silt deposited in the channel of the river made it higher than the surrounding country. Naturally, then, when the periodical floods came, the water overflowed the banks and sought the land-locked salt-water sea by channels cut for the purpose which are now known as the Alamo River and the New River. Then came other floods—and it is never possible to tell what a flood will do. The floods dammed the two channels that renewed the supplies of what, by this time, had become a fresh-water lake. Of course, under the circumstances, the lake had no choice as to its conduct, but had to dry up and disappear. There was left a great depression, at its lowest point nearly three hundred feet below the level of the sea, and some two thousand square miles in extent.

For a long time settlers looked with suspicion on the lands of the Salton Sink, as it was called. Then came the discovery that all those lands needed to produce crops of fabulous riches was water. About 1900 the California Development Company sought to supply the need by cutting an opening in the Colorado, and diverting a sufficient quantity of water from the streams through more than three hundred miles of canals, leading to all parts of the valley. The effort was successful. The water had sufficient fall, as the river at the point where the opening was made is one hundred and

AN IRRIGATING CANAL

ARIZONA DESERT NEAR PHŒNIX

ten feet above sea level, while the upper limit of the area to be watered—eighty miles away—is two hundred and eighty-seven feet below sea level. The lands were taken up rapidly. Six towns were built. Twelve thousand prosperous farmers depended on the water supply. But the periodical floods, depositing on the banks the same rich silt by which the Imperial Valley had been built, clogged the opening to the main canal. Another opening was made, and closed in the same way. Then permission was secured from Mexico to cut an opening fifty feet wide in the west bank of the river in Mexican territory, just below the California line, not far from Yuma, Arizona. It was in September, 1904, that this opening was made, and the builders delayed making preparations to close the gap. Why not? Months would pass before a flood was due.

But the unexpected happened. A cloudburst brought sudden flood and disaster. The rushing waters entered the fifty-foot gap, deserted their own channel, and rushed down the easier descent toward the Salton Sink, at the northern end of the valley. Fertile farms were inundated; towns were washed away; the railroad was destroyed; the great salt works were put out of commission; and an inland sea was formed in the Sink. But this was not the worst. The flood, hurtling forward down the rapid descent, scoured out a channel, deeper and yet deeper, wider and yet wider in the silt floor of the valley, and the rich deposits of thousands of years were ruthlessly swept away. Three times attempts were made to stem the flood; three times the men who battled with the river were driven back exhausted, and the waters swept on. On June 4, 1906, not long after the failure of the last attempt, an observer looked down

from a high tower in Calexico upon "a chocolate-colored expanse of rapids eleven miles in width." Twenty-five days later he looked again. The eleven-mile-broad expanse had disappeared in a canyon fifty feet deep. Less than five months later, from the same spot, he saw a gulch from fifty to eighty feet deep, and two thousand feet wide.

Through this channel the yellow waters rushed to the Sink, carrying with them the silt, about 450,000,000 cubic yards. Then the stream, unable to remain at rest in the Sink, began to cut backward, upstream. At the time it was reported that, at the maximum recession, the river cut out a canyon backward at the rate of one mile in forty-eight hours. The damage already accomplished and imminently threatened was thus described by Director Larkin of the Lowe Observatory:

Thirty thousand acres had already been washed into the Salton Sink, and thirty thousand more had been damaged by little canyons and gullies. The entire valley would soon revert to primeval desert, because the Colorado River would cut lower than the bank of the Imperial Canal, destroying its system of three hundred miles of canals, forever dispelling hope of irrigating the expanse of rich lands, both in California and Mexico. . . . Then desert, death and solitude would reign so long as the earth existed.

Further, the upstream cutting-out would continue until the United States' irrigating project about Yuma would be made forever impossible, and ninety-seven thousand acres more of rich land would become desert.

In order to prevent the irretrievable calamity of the cutting back of the waters until they reached the Colorado, the Southern Pacific Railway Company arrayed

all its forces to fight the river. A twelve-mile branch was built, orders were issued to every stone quarry within three hundred and fifty miles to get out material, and freight business on two divisions was brought to a standstill, that cars might be at hand to carry the rock quarried by thousands of men. Men and materials were massed at the break in the river, that everything might be ready; rock, gravel, sand, clay, piles, ties, steel rails, and a host of other things; a steamer, a flatboat, a giant dredger, steam shovels, a pile-driver, steam pumps, cables, spikes, picks, and hammers galore; six hundred Europeans and Mexicans, and four hundred and fifty Indians, as well as six hundred horses and mules.

Preparations thus completed, eight immense mountain-climbing locomotives began to distribute the material for use. Piles were driven across the stream. Steel cables were fastened to these. Hundreds of men on a flatboat made willows into bundles, bound with wire. Huge logs were buried in the silt-bank, a cable was attached to each log, then stretched to spools on the barge, and the willow bundles, each one hundred feet long, were fastened to the cables. "Thus the cables were the warp, and the bundles the woof, of a carpet one hundred feet wide and three thousand feet long. . . . The carpet slipped over the edge of the barge into the river and sank to the bottom, where silt at once began to fill in between the leaves and twigs," an observer wrote vividly at the time. Then the "carpet" was tacked down with piles, in two parallel rows. Next a railroad was built in the piles.

On the night of November 4, 1906, came the climax. The dam was constructed from both banks—a compara-

tively easy task. But, at last, the central aperture, three hundred and seventy-five feet, was to be closed against the tremendous deluge of water. It was an all-night battle, but it was won—for the time being.

Men breathed more freely, until the river broke through the great dam, and most of the work had to be done over again. Undismayed, the forces were once more assembled, and on February 11, 1907, the gap was again closed, after incessant work for fifteen days and two hours. Seventy-seven thousand cubic yards of rock, gravel and clay were handled. To one of the Interstate Commerce Commissions—so the papers report—Edward Harriman said that he considered this fifteen-day struggle the greatest achievement, not only in his own experience, but in recent history.

The trouble was not yet ended, but watchfulness and pluck finally conquered, and the Imperial Valley once more became the site of fertile fields and green orchards, of pleasing homes and prosperous towns.

CHAPTER XIII

ARIZONA'S COLORFUL CONTRASTS

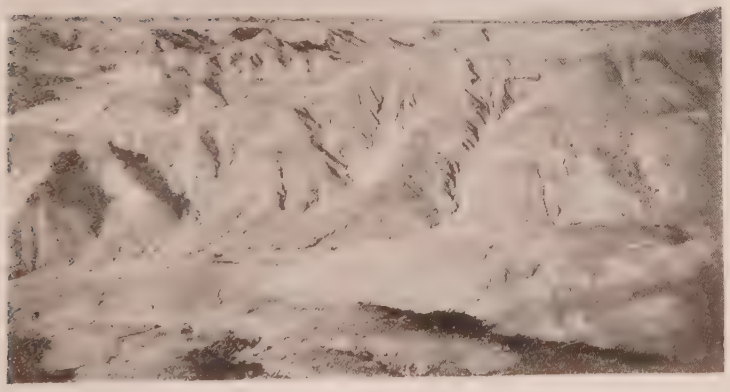
IT is not necessary to go to the Sahara to find contrasts of shimmering sands, parched desert and oases whose astonishing fertility is the gift of water poured out in abundance. All of these things, and many more, may be found in Arizona, the state of striking contrasts, of constant surprises, of varied and unsuspected grandeur. Robert Hichens has told of the Garden of Allah in North Africa, and has lured many to that land of the burning sun, but at our doors is a region that surpasses the novelist's garden as the mountain exceeds the hill, or as the sun surpasses the moon. Algiers may have the wandering Arab, the deceiving mirage, the ever-shifting sands, the flat-roofed houses with a background of waving palm trees; but Arizona has the Indian and his hogans, the Mexican and his adobes, the desert and its mysteries, and, in addition to all of these, forests and rivers, mountains and valleys, chasms and canyons, as well as cities in gardens of delight.

It is possible to cross the state from east to west or west to east by two railroads, and to pass from one of these railroads to the other by a crossroad; then there are highways that offer the finest inducements to the automobilist. To the tourist who makes use only of these main-traveled routes Arizona unfolds a startling array of wonders. But much of the best is reserved for those who go far afield, to the north or the south, to the east or the west of the ways that offer the easiest passage through the state, and so find regions of legend and romance.

It is, of course, interesting to note when passing Manuelito, the station on the Sante Fé that is almost on the line between New Mexico and Arizona, that the town was named for a Navajo chief, who, in 1855, tried in vain to put an end to the differences between his tribe and the settlers that continued until 1863. But it is so much better to be able to make the somewhat difficult journey to Canyon de Chelly and its tributaries, Canyon del Muérto and Canyon of Monuments. The trip may be made by motor to Chinle trading post, then by horse five miles to Canyon de Chelly. Of the many remarkable features of these canyons the greatest, perhaps, is the glistening White House, built no one knows how many centuries ago, in a cave forty feet high, two hundred feet wide and one hundred feet deep, hollowed out of the face of a forbidding cliff two thousand feet high. From the top of the cliff the cave cannot be seen, for the great rock face slopes inward more than one hundred feet.

The Rio de Chelly flows—when there is water in its bed—far down between sandstone walls. Here and there are odd-shaped pinnacles like, yet unlike, those in the Garden of the Gods. Concerning one of these, which is nearly eight hundred feet high, the Indians tell a remarkable story. In the days when there were thousands of people in the now desolate region, many of them living deep in the caves or perched high on the cliffs of convenient canyons, one of these cliff dwellers, caught far from home by enemies, was pursued to the precipitous banks of the Rio de Chelly. He despaired of hiding himself successfully until he saw, hanging from the top of a lofty pinnacle, a cord that looked as if it might bear his weight. By the aid of

NATURAL BRIDGE IN SANDSTONE, NORTH OF MANUELITO, ARIZONA



BAD LANDS, NEAR WINSLOW, ARIZONA

SCATTERED FRAGMENTS, PETRIFIED FOREST, ARIZONA

MONTEZUMA CASTLE, ARIZONA

the timely assistance he clambered up the sandstone pinnacle. From the top he watched his discomfited enemies far below him. They hoped to starve him into surrender, but he had so many eagles' eggs to eat that he was able to outstay them. Then he made his way to the base of the pinnacle, and rode away to his home on the cliffs. In gratitude for his escape, he told an admiring audience of the spider at the top of the pinnacle, which, seeing his plight, let down a heavy strand of its own spinning, and so made his escape easy. Of course there was but one possible name for the pinnacle after that; the Spider's Tower it is and must continue to be.

No legend is needed to add interest to the Petrified Forests, a district a few miles to the south of Adamana, the railroad town which may be made the terminus of the round trip to the canyon of the Spider's Tower. There are three of these forests where, scattered over an area of many square miles, are the trunks of hundreds of gigantic forest trees that stood in majesty in an age long gone. Probably they grew by a lake at some distance from the place where they now give delight to the visitor who picks his way among the broken sections or crosses the ravine in the First Forest, nearest to Adamana, on the sixty-foot agatized log embedded at either end in sandstone. When they fell they must have been carried down some stream to their final resting place. The next step in their history was the deposit of sand and clay above them until they were buried possibly several thousand feet deep. Then underground water displaced the wood cells by silica. Next came the erosion of the overlying sand and the uncovering of the marvels that are now like the jewels of Aladdin's

cave. Here are amethyst and topaz, onyx and chalcedony, carnelian and agate. Efforts have been made to cut the logs and release some of these jewels, but not much can be done in this direction when a six-inch steel saw is worn to a ribbon half an inch wide in the attempt to saw through a single log. Even then the work requires several days. It would be interesting to learn how the Indians managed to fashion their stone hammers, arrowheads, knives and scrapers from the chips of these jeweled logs.

It is fortunate that these fallen and transformed monarchs have proved so hard to cut; otherwise they might not have been on hand in such profusion when, in 1906, the four forests which make up the region were set apart as a National Monument. Visitors are forbidden to carry away any petrifaction, even the smallest chip, but they are permitted to know that thin slices of the logs have been ground down to an unbelievable thinness. To the naked eye of the casual observer these samples from Arizona's Garden of Jewels are a vision of beauty; under the microscope of the scientist they tell in plainest language the wonder story of transformation from stately, erect, cone-bearing trees, to prostrate cabinets of precious stone.

One of the comparatively few men who know well this region of the petrified forests is a character of whom Arizona tells with pride—old Ben Lily, a professional hunter who finds his quarry in the forests south of the jeweled tree trunks. It is his business to kill the lions and the bears that prey on the cattle that are grazing in the Apache Forest and its neighborhood.

This mighty hunter boasts that during four recent years he succeeded in tracking to their death one hun-

dred and fifty-four mountain lions, as well as forty-six bears. Since a single mountain lion has been known to kill enough cattle to make his damage bill five thousand dollars a year, it is evident that the animal trailer of the Apache Forest saves the cattle raisers immense sums. Naturally he is appreciated and is well paid for his work. Travelers who are fortunate enough to meet him when he is in a communicative mood go home with a fine repertoire of hair-raising stories.

Ben Lily and the mountain lions have a rival for the attention of travelers in the curious Crater Mound northwest of the Apache Forest, and only a short distance from the railroad and the National Old Trails Highway. This strange hole in the sandstone rock is about four thousand feet in diameter and six hundred feet deep. A rim of loose rock encircles the hole, and this is from one hundred to one hundred and fifty feet high. Once the popular name for this mysterious feature of the landscape was Meteorite Mountain, because of the belief of some geologists that the hole was made by a monster meteor. The story, and the discovery of a specimen of meteoric iron in the vicinity, led to the organization of a mining company whose promoters had tall dreams of the fortune they would find by probing for iron below the surface of the cavity. That they did not find iron was not due to the failure of the probes —they went to a depth of more than one thousand feet before it was decided that their dream was as elusive as that other perennial belief in Arizona, the existence of platinum in certain sections of the Grand Canyon.

So far it has proved difficult to turn the glorious canyons of Arizona into anything but things of beauty and grandeur, but why not rest content with these as an

attraction for tourists that cannot be duplicated anywhere? On every side these water-worn channels of rivers appear. Ten miles from Crater Mound is Canyon Diablo, which travelers by rail have a splendid chance to study when the train passes on the lofty, spider-like bridge that crosses the chasm 225 feet deep and 500 feet wide. Steep walls of limestone guard the channel where no water flows except after one of the rare but sometimes terrific rainfalls characteristic of this section.

Rare rainfalls and a river canyon suggested an opportunity to W. R. Johnston, a friend of the Navajo Indians, who found his way many years ago to the mysterious Painted Desert region to the north of Canyon Diablo. When he learned that no missionary work was being done among twenty-five thousand of these Indians, he made a clearing in a cottonwood grove on the banks of the Little Colorado, not far from the present site of Tolchaco. At first the Indians were suspicious of him, but later they were ready to do as he said.

He was troubled because the Navajos, who were not annuity Indians, but earned their living by sheep-raising, were compelled to be rovers. He found that their reservation is large, but that, because of the lack of water, it was useless for grazing purposes at least six months in the year. So the herders wandered about in search of pasture, remaining but a few weeks in a place. He could not hope to reach them effectively unless he could break up their nomadic habits. To do this, permanent pasturage had to be provided. The reservation itself offered little opportunity for the carrying out of his plan. The extra-reservation lands, however, are watered by the Little Colorado; that is, when there is

any water in the stream, which is only periodically. The bed is dry except after the infrequent rains, and when the melting snows send down floods from the mountains. Then the dry bed speedily becomes a torrent.

Mr. Johnston thought of the blessing to the Indians if only a dam could be constructed and the flood waters retained for use in time of drought. People told him that he could not succeed in building the dam, and that, even if this were built, he had no assurance that the land redeemed by so much labor would not be taken from him by greedy settlers.

The Indians were tempted to listen to the doubters, but, to assure them of the permanency of their investment of labor in his project, Mr. Johnston, with two Navajos, went to Washington and appealed to President Roosevelt to withdraw from settlement the land on the river, near the site of his cottonwood grove, in order to permit its survey and allotment to the Navajos, according to law. The request was granted at once.

Then the irrigation work was begun in earnest. A canal was dug, and a crude pile-driver was made by Mr. Johnston and an assistant, with the aid of a few Indians. Tools came from friends in the East. Whenever funds were exhausted the work was discontinued. Mr. Johnston was the tireless superintendent, and his Navajo helpers were inspired by his example. They were often hungry, but still they worked away with dogged determination. On one occasion, when the mission team was hired by settlers, the proceeds were used to feed Indian workers for two weeks.

When the dam was within three days of completion, a flood came down, caused by rains in the uplands.

When the Indians saw their work threatened, men, women and children were called into service. One woman nearly seventy years of age worked with the others to save what represented so much to the tribe. The flood gradually worked its way around the unfinished end of the dam, and soon cut a wide channel through it.

But the Indians were not discouraged. Again they set to work. The breach was repaired, only to be opened by a second flood. A third attempt was made, and the structure was finally finished—three hundred feet of stone and timber. Then all waited eagerly for the rising of the water. Although that season's freshet was not so great as usual, the water retained by the dam was enough to prove the feasibility of the leader's plan. The ditches were filled and the underground streams were replenished, so that a number of wind-mills drew water from wells driven in convenient locations.

Then once more the cry was raised, "The river is coming!" As before, every available hand was raised to avert the threatened calamity, but in spite of strenuous efforts the rushing waters tore a gap in the dam. Owing to unscientific building and the lack of proper tools, the structure was too weak to withstand great pressure.

This was in 1902. In December Mr. Johnston was urged by the Commissioner of Indian Affairs to visit Washington for a conference. Two leading Navajos, She-she-nez and Pesh-la-ki Etsetty, accompanied him. In Washington he was asked what it would cost to complete, in a first-class manner, the Indians' irrigation plant, including ditches, dam and conduits. When a rough estimate was made, he was at once told that five

thousand dollars could be appropriated for the purpose, and the Indians' friend was asked to accept an appointment from the government to take general charge of the work. The appointment was accepted on condition that no salary be paid. The Commissioner reluctantly agreed, but he insisted on sending out a clerk that the missionary might be relieved of accounts and correspondence.

In February, 1903, a competent engineer was hired and the work of rebuilding was begun. A number of miles of ditches and laterals were laid off, and plans were drawn for a more massive dam. The Indians flocked in, hungry, and eager for a chance to earn their bread at work that promised so much for their future. One old man, who lived across the river, walked ninety miles to reach the work. The river was high and the water was cold; but, securing a shovel, he swam across and asked for employment. There was soon an entire brigade of old men who worked diligently. Their ages ranged from fifty to eighty years. By March 8 there were seventy-eight Indians of all ages on the pay-roll. They were unskilled and undisciplined, but they responded readily to the instruction of their foremen. Soon the dam was completed, but again flood came and took it away. Since that time the work has not been renewed, but somehow the missionary managed to keep the Indians within reach of Tolchaco. A successor is in the place of Mr. Johnston, but he is a man of like spirit.

"How can an intelligent man like you be content to remain for years among the Indians?" asked a visitor to one such lonely mission station among the Arizona Indians. The reply compelled thought:

"Yonder lives a trader—a man of intelligence and of

more than ordinary business ability. He has been here for more than thirty-five years. He came when life among the Navajos was not unattended by danger and when the discomforts and inconveniences of a home in the desert region were infinitely greater than now. He has lived here for more than a third of a century, and will doubtless die here. Why did he select so dreary and unattractive a life? To make money. He has accumulated a fortune. Then shall I be less zealous in serving my Master than he has been in striving for wealth? It does not seem strange to you that these Indian traders are scattered here and there all over the reservation. Why should it seem strange that we missionaries accept the same sort of life with gladness?''

The Navajo Indians have been more responsive to efforts for their enlightenment than the Hopis, whose villages, of which Oraibi is one, are sixty miles north of Winslow. This is the tribe whose snake dance is a biennial attraction in Arizona. The ceremonial is accounted for by a weird story, current among the Hopis, that begins with the coming to earth of the first men from the lower world to remote recesses of the Grand Canyon. When these first men went here and there, as their fancy led them, the Hopis turned north until the cold became so severe that they were forced to seek the South once more. There they made their home and planted their crop. But no rain fell, and they were in difficulty. So Tigo, one of the chief men, decided to go back to the lower world and ask for advice. Embarking on the Colorado River in a dugout canoe, he waited to be floated to the abode of the gods. After descending fearful rapids he was swallowed up in the depths and found himself in the country of the Snake-

Antelopes. There he learned how to force the clouds to send the life-giving rain to the earth.

Before he started back to earth he persuaded two Snake-Antelope maidens to accompany him; one of them he agreed to marry, while the second was to marry his brother. When Tigo was safe at home the marriage feast was held. Among the guests appeared some of the Snake people, disguised as snakes, who danced with the Hopis. At the end of the marriage celebration the snakes went home, in their own forms, promising to bear to the under-world the prayers of the earth people whose acquaintance they had made so pleasantly. This, so the story runs, was the first of the snake dances that have followed for ages.

Indian legends are fitting company for those who go to Walnut Canyon, eight miles from Flagstaff, one of the most accessible of all the cliff dwellings of the southwest. Reached as it is by the Santa Fé as well as by the Old Trails Highway, several thousand people each year look on the thirty prehistoric dwellings along both sides of the canyon. Some of these visitors go some fifty miles farther southwest, to Montezuma Castle, in Yavapai County, another National Monument named for the chief feature among the cliff-dwellings to be found there, a structure built in a cavity half-way up the cliff, which is reached by wooden ladders fastened to the face of the rock. The Castle is five stories high; and it has many remarkable features, among them being the timbers which bear the marks of the stone axes of the builders. There is no sign of decay in these timbers, in spite of the lapse of no one knows how many centuries.

While Phœnix is the usual point of departure for Montezuma Castle, this curiosity may be reached from

Flagstaff, the lumber town in the edge of the great Coconino Forest whose nearly six thousand square miles reach from the Grand Canyon far to the south.

Flagstaff commemorates by its name the action of a company of emigrants who here raised a flag one Fourth of July in the early days of Arizona. Those emigrants must have been reluctant to leave their camping place by the flagstaff. It was a pleasant spot then, but it is far pleasanter to-day by reason of the acts of public-spirited citizens who have made the town an inviting place.

The enthusiastic automobilist will remember it because from here, once the point of departure of the stage for the Grand Canyon, a fine road leads to the north, through the Coconino Forest, whose pine trees are from 450 to 520 years old, to the Grand Canyon at Grand View Point, thence near the rim of the canyon to the hotel at Grand Canyon and back to Old Trails Highway at Williams, where passengers by rail change cars for their sight of what Joaquin Miller called "a saber thrust in the rich, red bosom of Mother Earth," and Fitz-James McCarthy described as "this geologic apocalypse, half mystery and half revelation."

The highway from Flagstaff to Grand View passes to the east of the San Francisco Mountains, whose lofty peaks are treasured features in the Flagstaff landscape. These mountains were favorite resorts of the Indians. Here the Havasupai refugees fled after being driven from the Little Colorado, and from here they went to their present home in Cataract Canyon. This, too, was the place of the Navajo legend of the coming of the first men and animals to earth.

The Great Spirit had created them, but had shut

them up in a great cave in the San Francisco Mountains. They were content with life in the dark until a badger saw a locust disappear in a hole in the wall which he had made for himself. The badger enlarged the hole, and fell down the mountain side into a lake in the Montezuma Valley. There his forepaws were covered with mud. This, say the Navajos, is the reason for the badger's black front feet. Missing the badger, the Navajos investigated. Finding the hole, they enlarged it until they could make the exit to earth. In a little while the cavern was empty, and the earth was peopled!

For two hundred miles more canyon and mountain, desert and cliff greet the travelers, all the way to the crossing of the Colorado into California, at Needles, where an unusual winter climate, palm trees, irrigated lands and the curious formation from which the town takes its name, attract those who look for a pleasant resting place.

But it is not sufficient to cross Arizona once; the state is so large and its surface is so varied that the Southern Pacific route from Yuma to the region of Tucson and beyond should be added, if possible.

Yuma contests with Needles the claim to be a winter resort; the proprietor of the hotel by the station blazons to travelers, by means of a great sign, the fact that free board will be given on every day the sun does not shine. But Yuma people have a fondness for attracting the attention of those who pass through. Once the popular scheme was a box like a bird cage perched on a pole on the station platform. Above the box was the sign, "Red bat from the Montezuma Mountains." Of course, as the passengers from the waiting

train filed by, one in each company lifted the curtain, to see—a bright red brickbat. Thus harmlessly the humor of the sun-blessed Yumaites expended itself until some other suggestion came to them. But most of them are too busy raising staple cotton and alfalfa to take part in jokes on tourists.

From Yuma it is good to follow the valley of the Gila River to Phœnix, whose claims to an ideal climate are superior to those of the Colorado River town; whose situation among the palms is so attractive that it is difficult to leave the city, and return to it becomes almost a necessity.

The man who thinks of Arizona as a barren desert should study Phœnix and its surrounding wealth of rich agricultural land, fed by carefully treasured water. And anybody who thinks that the impounding of the water is a modern invention, should see near at hand the evidences of the ancient civilization of the Indians, who had their systems of irrigation centuries before the white man thought of making his garden in the desert. These Indian irrigation works may be seen best in the region of the Salt River, some eighty miles from Phœnix, where eleven main canals and scores of miles of laterals can be traced, a system capable of enriching at least one hundred thousand acres.

The building of a grand dam in Salt River that should duplicate and surpass the triumphs of the Indians was one of the early irrigation dreams of President Roosevelt, who may well be called the father of irrigation.

The story of the building of the dam for the impounding of the water of that stream and Tonto Creek will always be an epic in the story of irrigation. The

site selected for the dam was in a great canyon which called for a structure 280 feet high and 1125 feet long. The nearest railway station was forty miles away, yet the material had to be transported across the waste. And there was no road. But the road was built, many miles of it by Apaches, who were proud to work without a timekeeper. A cement mill had to be built. Lumber was cut in a sawmill erected for the purpose in the Sierra Ancha Mountains. Electric power was provided by water brought in a canal thirteen miles long, but until this was built the power needed came from three engines which required, every four weeks, a pile of wood four feet high, four feet wide, and more than a mile long. And all the wood had to be carried by burros a long distance.

The road built—in part by Apache laborers—in preparation for the construction of the dam is now known as the Apache Trail, from Globe to Phœnix. This is one of the marvelous roads of the country, not merely because of its splendid surface and the wonderful scenery along the route, but because of its history. In addition to the Apaches, convicts from the Arizona State Penitentiary were employed. These men were put on their honor. Among the thirty convicts who were busy, on the average, many were serving long sentences, even life terms. There were no jailers over them, though for six months they were far away in the pine forest. And only three attempts were made to escape!

The road begins at Globe, the smelter town, where the flames leaping from the great stacks startle those who think they have left far behind them all such evidences of industrial progress.

Forty miles from Globe the road passes the Tonto National Monument, where automobiles may approach within half a mile of some of the cliff dwellings of the ancient people who first irrigated Salt River Valley. Four miles farther west is Roosevelt Dam. Then from the Tonto Basin to Phœnix come the best of the one hundred and forty miles of the highway. The approach to Phœnix, through the canyon, along Salt River, and through bending cottonwood, makes a satisfying preparation for the disclosures the capital of Arizona is about to make.

Arizona should not be left behind until a pilgrimage is made to Tucson, southwest of the Roosevelt Dam, and almost directly south of Globe. Here, on the Santa Cruz River, which was a favorite route to the north of the early Spanish explorers, was the site of an ancient pueblo. To the north and northeast the Catalina Mountains lift their rugged peaks far into the sky. Other ranges are near at hand. Many unique canyons are everywhere, especially in the Catalinas. One of these, Sabina Canyon, has a stream of water that falls 3700 feet in six miles! The stream rises in the heavy timber on Mount Lemnon: the Catalinas are distinguished, among other things, by their dense forests. First, at an elevation of about six thousand feet, there is a forest of yellow pine, the trees being from fifty to sixty feet high. Then at the 7500 foot line begins the white fir forest.

Only the initiated expect to find in the vicinity of Tucson what has been called the most interesting mission church in America. Nine miles from the city in the desert, is San Xavier del Bac, founded in 1692 by Fra Eusebius Kino. The present ornate building dates

from 1783. The descendants of the Papago Indians, for whom the mission was begun, live in a village near by this old Spanish mission, whose interior is said to exceed in beauty that of any of the missions on the Pacific Coast.

But Tucson has yet another claim to fame. On the lower slope of Tumamoc Hill, close to the city, is the Desert Botanical Laboratory of the Carnegie Institution, whose builder and director, D. T. MacDougall, is conducting a many-sided study to solve the mystery of desert plants. How did the Indian live off the desert vegetation, as he must have lived in days of old? Then how can white men follow this example? How much water do these plants need for their growth? The answer to the last question will be of great help in solving the problem of irrigation. Special objects of investigation are the yucca, the prickly pear, and the Saguaro or giant cactus, frequently more than fifty feet high, whose dense clusters of whitish flower buds open for a very short time about March 25.

From the reservation of 863 acres at Tucson and the plantation in the Santa Catalina Mountains the Desert Laboratory is making steady progress in the study of problems whose solution will make Arizona more than ever the Queen of the Southwest.

CHAPTER XIV

IN THE LAND OF THE DONS

THE daring traders who sought Santa Fé in early days in spite of the frantic "Thou shalt not!" of the Dons toiled over the mountains through the Raton Pass after passing from what is now Colorado into the storied province of Mexico that bordered on the Louisiana territory. And over the same pass the traveler goes to-day, whether he uses the Santa Fé Railroad or the delightful highway from Trinidad, Colorado, to Raton, New Mexico. This will be found one of the most pleasing sections of the automobile road from Cheyenne to El Paso. Here and there are reminders of the brave days of the pioneers when men were on their guard against Indians and Mexicans, and goods that they finally succeeded in getting through the perils on the way to Santa Fé brought rich reward. Near the summit, on the Colorado side, is one of these landmarks—the remnants of the adobe toll-house where travelers were held up by the lawful demands of a duly accredited road agent.

Among other advantages that the highway has over the railroad is the continuous passage through the exhilarating open air, with the vision of mountains and valleys of Colorado behind, uninterrupted by the Raton tunnel, just beyond the state line. After the summit is passed, the descent is rapid down the mountain side leading well into the state that combines perhaps more than any other the storied past and the poetic present—the land of the conquistadores, of the cliff dwellers, of

the Indians; of Mesas and pueblos and forests; of color and sunshine; of desert and fertile valley; of ruins of centuries long gone and monuments of the constructive genius of men of to-day: a land of surprises wherever the visitor turns. And those who seek New Mexico are increasing in number, for people are learning that the state has satisfaction for the sightseer, the hunter, the fisherman, the archæologist, and the health-seeker, as well as for the homemaker and the business man.

Colfax County, in which the traveler finds himself as soon as he passes Raton Summit, is reckoned one of the smaller counties of the state, yet it is much larger than several of the states on the Atlantic seaboard. It boasts a long list of lofty peaks, and it has many high fertile mesas where irrigation is unnecessary, as well as sections where irrigation works its wonted transformations. Much of the construction work for irrigation has been done by the Maxwell Land Grant Company, whose story has been sketched in an earlier chapter.

One of the contrasts for which the state is noted is presented by Raton, "the Gate City of Mexico," which has a speaking acquaintance with the Raton Mountains, and Taos, some distance to the east. Those who use the railroad may seek Taos from Springer, not far from Raton; but those who travel by automobile will find a number of approaches to the city of the past at the foot of the Sangre de Cristo Mountains. This haunt of the artist is built on a plateau above the Rio Grande. There the old dwellings of the Indians, built on a succession of terraces, reached by ladders, are all the more interesting because, unlike the cliff dwellings of Mesa Verde Park, they are occupied by cleanly, dignified-

looking Indians. Near by are the conical outdoor ovens that are a feature of the New Mexico landscape, and within easy reach is the old church that dates back to the year when the Pilgrims landed in Massachusetts! But the pueblo must have been ancient then.

To the northeast of Taos, almost in the northeast corner of the state, a monument far older invites those who delight in relics of the past as well as in the grand in nature. This is Capulin Mountain, which has been called "the most perfect extinct volcano in America." The approach to it is easy from several directions, but is easiest from the Ocean to Ocean Highway; this passes within two miles of the volcano. Indeed, automobiles have no difficulty in going up to the base of the mountain itself. It is so highly regarded both by scientists and from a scenic point of view that in 1916 it was set apart as a National Monument.

While Capulin is only 8000 feet high, it presents an impressive appearance because it rises 1500 feet above the plain. It is one of a number of extinct volcanoes in the section, but it is the largest and most significant of the lot. Cinders and lava and cemented breccia combine to form the cone of the crater, which is 1500 feet in diameter, and from 75 feet to 275 feet deep.

Unless the traveler is proof against the lure of the side-trip his progress toward Las Vegas and Santa Fé will not be rapid. Watrous—just below Wagon Mound, a point of note to the wagoners who plodded along the Santa Fé trail because here was a Mexican custom house—is the gateway to Mora Canyon, which offers in its course of fifty miles a foretaste in miniature of the delights of the great canyon land of the Southwest. And

if the traveler is eager for canyon scenery he can find much to please him along the Rio Gallinas, near Las Vegas.

The automobile highway from Las Vegas to Santa Fé leads through one of the great national forests of New Mexico, and from the steep grade crossing the Sangre de Cristo it looks down on a country rugged, varied and thoroughly satisfying. At the end of the route is the city with the long name that everyone likes to read once, that no one has time to repeat—Ciudad Real de la Santa Fé de San Francisco. No wonder they shortened it to Santa Fé!

On the site were once settlements bearing other names. There was the pueblo of Yuklwungge, as the Indians called it; surely Coronado cannot be blamed very much because he transcribed the difficult word Yuqueyunge. Then, in 1599, San Gabriel followed. Santa Fé dates from 1605, and this is, next to St. Augustine, the oldest city in the United States.

Those who view certain parts of the city will be apt to agree that it has not changed much since Zebulon M. Pike, who came this way in 1807 from Colorado, by the enforced invitation of the Mexican authorities, said that it reminded him, at a distance, of a fleet of flat-bottomed Ohio River boats.

While it is true that there are still remaining many of the low adobe buildings characteristic of an earlier age, some of them full of historic interest—as, for instance, the palace where American governors succeeded a long line of Mexican rulers—there are also more modern buildings that bear witness to the progressiveness of the people, who welcome strangers always, but never so much as when they wax eloquent about the capital of

the state in its setting of mountains from 10,000 to 13,000 feet high.

Among the attractions offered by Santa Fé are the incomparable tours that may be taken in almost any direction by automobile. Twenty-five miles west of the city is the Bandelier National Monument, Mecca not only of the archæologist but of the curious as well. The 22,075 acres of land within the Santa Fé National Forest, set apart here for the pleasure of the people in 1916, include numerous canyons tributary to the Rio Grande, which in the northern part of its nearly four-hundred-miles course through the state is far from being the sluggish stream with comparatively uninteresting banks that becomes familiar farther north.

But first there is the pleasure of the jaunt from Santa Fé. Frequently a trip is endured merely for the joy that awaits at the end. Let no one get the idea that the journey to Bandelier is of this description. Over the varied plain, with sky of vivid blue above, while, far ahead, are the mysterious hazy mountains; up hill and down, over streams that brawl and past canyons that give a hint of their hidden rocks and cliffs and cascades! Then, unexpectedly, the eyes are greeted by dwellings on the cliffs, long abandoned, but still eloquent of the vanished Indians who made their homes in these clefts of the rocks.

Perhaps the most remarkable of the dwellings are along the Rito de los Frijoles. There is Tyuoñi, the house where perhaps two hundred families lived. On all sides are smaller houses, and not far away is the vast ceremonial cave that looks like an eye in the face of the cliff. To this cave countless thousands of unknown Indians must have gone for worship in the days of no

SORTING COWS AND CALVES IN A NEW MEXICO ROUND-UP

one knows how long ago. For when the Spanish explorers came this way, there was no more sign of habitation than there is to-day. It is comparatively easy to ascend to the cliff and to descend from there to the floor of the cave where there are hints that the place was the resort of those who followed the lead of their priests in the simple worship of the primitive man. As the eyes look out across to the opposite wall of the canyon, over the tree tops that grow from the floor far beneath, it is easy to dream of those who took the same look centuries ago. But there is no satisfactory answer for those who ask who these people were, or how long ago they lived, or why they abandoned the homes that had been fashioned with such infinite pains, or what was the purpose of the great Stone Lions, each about seven feet long, which archæologists agree are among the most important specimens of aboriginal sculpture in the United States.

These Stone Lions are south of the Rito de los Frijoles. To the north is the Pajarito Canyon, with more attractions, and then come half a dozen more canyons which are so crowded with reminders of the past that fresh discoveries still wait for the patient explorer.

Large as are the dwellings of Bandelier others yet larger await those who go farther north to Chaco Canyon National Monument. A single ruin in Chaco, Pueblo Bonita, has 1200 rooms, and is the largest ruin of the kind known in New Mexico, Arizona, Colorado or Utah, the home of the cliff dwellers. Perhaps the Chaco Indians had some connection with those who lived in the canyons of Mesa Verde National Park, for the distance between the two is not great.

When the visitor reluctantly agrees that the time

has come to turn from Santa Fé and its excursions into the canyon homes of the long-ago and the delightful haunts of folks of to-day, Albuquerque is ready with other riches in the seemingly endless presentation of New Mexico's varied panorama. Primarily Albuquerque is a bustling business center; her citizens boast that its merchants cover a trade territory larger than the six New England States. But they have time to talk also of their University of New Mexico, built on a height above the city that affords a view of unusual extent even for a state where the air is so clear and the heights commanding boundless space so conveniently placed that prospects of river and mountain and plain would become an old story if they were not so different one from the other. Think, for instance, of a university on a site "with the Sandia Mountains twelve miles to the east for a background, while the view takes in the Jemez Mountains, sixty miles north; the San Mateos, seventy miles west, and the Socorro and Magdalenas, seventy-five miles south; while with the glass may be seen the Mogollons, more than two hundred and twenty-five miles south." If the chief purpose of a university is to give to a student a broad outlook, Albuquerque's school at once places other institutions under a serious handicap!

Albuquerque also has a pueblo all its own; for, by courtesy, Isleta may be considered a suburb of the city of broad views. One of the advantages of Isleta is that its squat adobe houses are in plain sight from the windows of the Santa Fé Railroad train. Those who wish to see terraced houses must go elsewhere, but those who are content to look on a village that is on the same site, and many of whose buildings are probably the

same, as when Coronado made his visit in 1540, will find Isleta what they want. A fleeting glimpse from the train or the motor is better than nothing, but there is satisfaction in stopping for an examination of the curious pueblos and for an interview with the unassuming governor who is chosen by the votes of the people of the community village. There is call also for a lieutenant-governor, a council of twenty-five members, a sheriff and a judge, whose decisions must be approved by the United States Indian Agent. The Isletans are numbered among the thousands of Pueblo Indians of the state who own nearly a million acres of land and boast of United States citizenship through the operation of a clause in the treaty of Guadeloupe Hidalgo in 1848, though they have not the right to vote.

Laguna, another of the curious pueblo towns, can be seen only after a journey of two miles from the railroad station of that name. But the trip is worth while, since it is the first stage in the absorbingly interesting motor ride—over a rather rough road, it must be owned—to Acoma, the pueblo of the pueblos whose history is as romantic as anything in this state of romance.

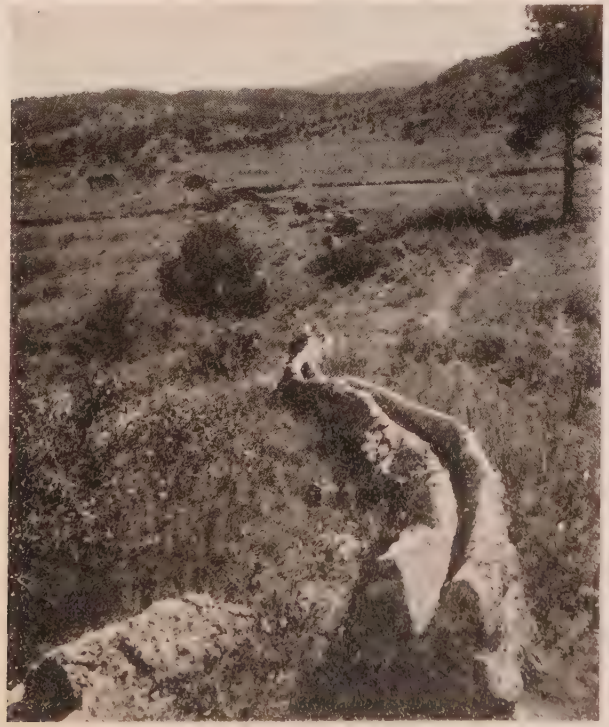
Acoma pueblo is a series of terraced houses of plain adobe construction, whose upper terraces are reached by the customary ladders. For one thousand feet these houses extend from end to end, while they are forty feet to the highest terrace. They are built on a precipitous rock three hundred and fifty feet above the mesa seven thousand feet higher than the sea.

When the visitor is told that the present approach from the plain to the rock is easy when compared to the method of approach in days when enemies were about, he has new respect for these hardy mountaineers

whose ancestors thought nothing of toiling up a stairway that must have been as difficult as modern construction ladders to a lofty church steeple. That these men paid little heed to such difficulties is evident from the fact that the walls of the church are sixty feet high and ten feet thick, while its timbers are forty feet long and fourteeen inches square. All this material was painstakingly carried up from the mesa. The length of time required for this herculean task may be judged from the fact that forty years were consumed in transporting and depositing the earth for the churchyard.

Three miles from the rock where the Acoma pueblo is situated is a strange formation that stands out from the plain in curiously insistent fashion—the *Mesa Encantada,* or Enchanted Mesa. This inaccessible height—so tradition says—was the original site of Acoma. How the Indians managed to ascend to its forbidding summit, four hundred and thirty feet high, is a problem that can never have a solution. The reason for the abandonment of the fortress is equally an enigma, though the always accommodating tradition again gives its help by suggesting that the reason was the fall of a portion of the cliff while the men were absent on an expedition; when they returned and found some of the women dead in the débris they sought a site somewhat more approachable.

For many years archæologists looked hungrily at the cliff. In 1897 one of these, no longer able to resist the temptation to learn what relics of an ancient civilization were there, managed to reach the coveted goal by the aid of ropes attached to a smaller rope shot over the rock by the aid of a mortar. After the dangerous journey in a boatswain's chair he groaned in dismay



SUPPOSED REMAINS OF AN ANCIENT IRRIGATION DITCH, NEW MEXICO

NAVAJO CHURCH, NEAR FORT WINGATE, NEW MEXICO

RUINS OF PECOS CHURCH, NEW MEXICO

THE MESA ENCANTADA, NEW MEXICO

because the lofty surface was bare—evidently the elements had succeeded in destroying everything on that exposed place; that is, if there was ever anything there. Later expeditions have shown more ingenuity in the conquest of this supreme mystery of the mesa, but with no result except an experience unusual even for mountain climbers.

There is, perhaps, a little more satisfaction for the student of history in a side trip from Gallup, a Santa Fé railroad town near the western border of the state, where Inscription Rock led to the setting apart of El Morro National Monument. The road to the reservation is over a high plateau, and the journey makes an appeal for its own sake, even though four or five days are required, unless there is an automobile involved. Accommodations are scarce, and it is necessary to camp out at water holes along the way. If the trip becomes monotonous it can be broken by a stop at Zuñi pueblo, attractive especially because of its reputation of being the oldest continually occupied Pueblo Indian village in existence.

El Morro and Inscription Rock are about thirty-five miles from Zuñi and fifty-five miles from Gallup. There are really two rocks, though so close together that they seem one from some points of view. Both are notable because on the hard faces some of the early Spanish visitors left their autographs, as a record that they came this way. The student of history will always be thankful that they did what in a traveler of to-day would be an unpardonable affront to the monuments of nature. So many latter-day visitors to the silent rock in the midst of the silent mesa have shown a desire to follow the example of the first white visitors that the National

Park Commission has found it necessary to build a fence nearly a mile and a half long at the base of the rock. Nominally this is to keep cattle away from the inscriptions. But surely would-be marauders of another sort can easily take the hint that John Smith must not attempt to register below Juan de Oñate, the founder of Santa Fé, whose visit was made in 1606, Don Diego de Vargas, the Spanish conqueror of the Pueblo Indians in 1692, or the eighteen other Spanish recorders, the earliest of these having written their names in 1526.

A great cave, a bubbling spring that is a rarity in this region, and ruins of a pueblo in the walls of a cleft in the rock, complete the tale of the attractions of El Morro, The Castle.

In the Manzano National Forest, to the south of Albuquerque, is the last of the national monuments of New Mexico, Gran Quivira, which may be reached from Mountain-air by a stage trip of twenty-four miles. There are in this monument eighty acres of pueblo ruins, but the feature of the monument that makes it worth while to those who have seen other pueblos is the ruined cruciform church, about forty-eight by one hundred and forty feet. The limestone walls still stand twenty-five feet above the ground and fifteen feet under the present surface. This does not mean that the builders chose to have such massive foundations, but that the surface of the ground is higher than when the church was built.

Yet it must not be thought that all the wonders of New Mexico have been taken under the fostering care of the Government. There is ample opportunity for the

creation of a dozen more national monuments. Perhaps these, too, will be fenced in some day.

In the meantime the state has other tremendous government monuments of a nature far different from any of those named in this chapter. There are the seven National Forests with their more than eight million acres. And there are the great irrigation projects along the Pecos and the Rio Grande. But to tell of them would take a book, just as merely to see them adequately would require more than one vacation summer. But what vacations these would be!

CHAPTER XV

THE ALLURING DESERT

"AFTER a month spent in the desert, you will either love it or loathe it for the rest of your life."

This statement of Director D. T. MacDougall of the Desert Laboratory at Tucson, Arizona, may not mean much to one who has not made close acquaintance with the leagues of shifting sand, of chaparral and sagebrush, of mesquite and cactus, of mountain and arroyo that give splendid variety to New Mexico and Arizona, to California and Utah and Nevada, as well as to regions farther north. It is easy for those to talk disparagingly of the desert whose only knowledge of it is gained by looking from the window of a Pullman. But let judgment wait until the railway has been left far behind, until days and weeks have been spent beneath the sky that never seemed so blue, until the burning sun shows what dry heat really is; until, from beside the campfire, the wonderful vision is gained of stars that gleam with new brilliance from an expanse of sky so vast that it becomes necessary to revise one's notions of space; of the Milky Way, whose name will seem at last the only possible description of that phenomenon of the heavens; of the moon, whose incandescent light glows from an orb that looks as if it had been enlarged for the occasion. Let the carper listen intently to the message of the silent stars, of the hovering mountains, of the brooding sands, of the spectral cactus—and either he will be lonely ever after in the crowded city street, and will dream of the alluring desert through the weary

time he must spend away from it, or, at the first possible moment, he will turn his back on the lonely waste, seeking instead the bustling city, and will shudder in those unwelcome moments when thought recurs of experiences that seemed so trying. Yes, for the remainder of his life, he will either love it or he will loathe it.

There was a time when everyone thought of the deserts as a terrible barrier between the Missouri and the Pacific Ocean. As late as 1842 the Great American Desert filled a large place in the imagination of the people as well as on the map in the school geographies. Little by little, however, the bounds of the desert have contracted, and for this contraction two agencies have been responsible—the water that came by irrigation and the knowledge that came by investigation. And still the limits of the waste lands grow less, for what that lover of the desert, William T. Hornaday, calls "The Irrepressible Conflict" continues year by year—"the great struggle between Man and Desert which is going on over a wide empire of territory, stretching for fifteen hundred miles from Western Texas to the Pacific Ocean."

But there are sections of the old desert that are the same to-day as they were one hundred years ago, and that will probably be unchanged for ages yet to come. One of these is the salt basin of Nevada and Utah, whose elevation is about five thousand feet, where rivers lose themselves, where salt lakes find hospitable surroundings, and where sagebrush and greasewood are the only vegetation. This was the region that became so familiar to the California emigrants.

Glimpses of such a desert may be gained from points on the Central Pacific Railroad, from the windows of

the Los Angeles and Salt Lake Railroad, and from the Tonopah and Tidewater Railroad. The latter road approaches close to the famous Death Valley, that curious, elongated desert of evil fame that lies between the Funeral Range and the Panamint Mountains, in California, near the boundary of Southern Nevada.

Death Valley leads into the Mohave Desert of Southern California, memorable for the graceful and luxuriant tree yuccas to be found in abundance to the west of El Cajon Pass. Frequently they are from fifteen to twenty-five feet high and from one to two feet in diameter. The juniper tree and the creosote bush in their turn help to make the appeal of the Mohave landscape.

The Colorado Desert, farther south, extending from California into Arizona, offers a delightful surprise in the groves of native fan-leaved palms that grow luxuriantly in canyons of a spur of the San Bernardino Mountains. Many of the trees are two feet in diameter and fifteen feet high. There is just enough rainfall in the canyons and on the mountains above them to provide the small amount of moisture needed for the growth of the trees, perhaps three inches a year. The oases where the palm trees grow are a pleasing reminder of the park-like uplands near Santiago, Cuba.

Farther out in the desert the clay that holds the moisture for the palm trees gives way to sand, sand that is driven by the western wind in a fashion that seems trying until the disagreeable feature is forgotten in the examination of the telegraph poles that are soon almost cut through close to the ground, and the creosote bushes that are twisted most weirdly.

Those who cannot go far into the desert, yet long to see some of the desert's attractions at their best, have

SOUTH FRONT SAN BERNARDINO RANGE, SHOWING DESERT VEGETATION, SAN GORGONIO PASS, CALIFORNIA

IN THE ARIZONA DESERT

ARIZONA DESERT BEFORE CULTIVATION. CAMEL BACK MOUNTAIN IN BACKGROUND

provision made for them by the government. Nine miles from Phœnix, Arizona, reached by a substantial automobile road, several thousand acres have been set aside as the Papago Saguaro National Monument. Here the yucca palm, the prickly pear, the great cactus (the Saguaro), and other forms of desert flora grow in abundance. The Saguaro frequently reaches a height of thirty or thirty-five feet, and has a number of branches near the top that grow from the main stalk like the arms of a candelabrum. Sometimes the Saguaro has saved the lives of those left without water in the desert; it contains much sap, though this is rather bitter. Those experienced in desert phenomena much prefer to find in their extremity a specimen of the barrel-like Bisnaga cactus. W. T. Hornaday, in one of his volumes of travel, told of the method of extracting water from the Bisnaga. First the top was cut off. The white pulpy interior was then open to view. A pounding-stick was cut from a near-by plant. With this a number of the party "began to attack the central surface of the decapitated Bisnaga, and white bits of cactus-meat began to fly like sparks from an anvil. Several handfuls of the pulp were lost because there was nothing to contain them; but presently a cavity began to form. In this the meat was pounded to a pulpy mass, and in it water began to appear. The man whose hands were the cleanest was invited to take out some of the water-logged pulp and wash from his hands the deposit of desert drift; which was done. Then he proceeded to squeeze the pulp between the hands and throw it away. By alternate squeezings and poundings about three pints of white water soon were accumulated, and we were invited to step up in orthodox fashion and

drink out of our hands, as do lost men in the desert. The water was surprisingly cool, a trifle sweet, and in flavor like the finest kind of raw turnip."

How does the plant secrete so much water in such a barren region? Like all great cacti, its many roots spread out in every direction for fifty feet or more. They are very close to the surface of the sand—so close that they drink in every drop of moisture that comes within reach. Through the roots the water is sent up to the pulpy storehouse in the body of the plant.

An old miner, George W. Parsons, who trudged for years over the deserts, has done more for the thirsty traveler than all the Bisnagas that grow. He had a vision of signposts wherever desert wayfarers might find themselves, to point the way unerringly to springs and water holes that are often within a few yards of those whose lives are needlessly lost. For fifteen years he talked of this vision. Finally the authorities were interested, an appropriation was made by Congress, and, with the help of the United States Geological Survey, Mr. Parsons was privileged to begin work in 1916, the object being to "develop, protect and render more accessible for the benefit of the general public, springs, streams, and water holes on arid public lands of the United States, and in connection therewith to erect and maintain suitable monuments and signboards at proper places and at intervals along and near the accustomed lines of travel."

The first signpost was erected at the point where the desert road to Parker, Arizona, leaves the main Phœnix-Yuma road. Hundreds of other signposts have been placed in Southern California and Arizona, in the Colorado Desert, the Mohave Desert, Death Valley, and

west of Tucson and Phœnix. Ultimately it is intended to cover the entire arid area of the country, more than half a million square miles.

Mr. Parsons, in telling jubilantly of the results of the first year's work in fulfilment of his dream, wrote of his anticipation of the day when there can no longer exist the awful conditions here set forth:

Noon. Into the unshaded wilderness the mounted sun pours his intolerable rays, making the thin air dance. Myriad infinitesimal shadows lie shrunken in under the innumerable clumps of brush—even the gray-backed lizards have ceased their darting and sought shelter from the mid-day blaze. Nothing moves. Nothing disturbs this desolation of silence but a lost man, crazed, bareheaded, semi-blinded, moaning for water, water, in that scorched and barren waste. Anguish of thirst, the like of which may be only once endured, has drawn back his lips and the sun has cracked and baked them. His blackened tongue protrudes. Crouched in the desert there drifts to his dying ears the music of splashing waters; to his dimming eyes appears a perfect vision of fountains and marble fonts and fern-embowered shade—and oh, it is so near! Leaping, uttering delirious sounds, stopping to divest himself, now of one frayed garment, now of another, naked he runs to cast himself into his Eden of moisture, into his palace of shadows, and stumbles into the Paradise of the grave.

Those who know their desert tell another romance of the waterless sand wastes—the story of the camel corps, General Edward F. Beale's scheme for the transport of army supplies. His thought was that there was little water to be found; that camels need little water; so why should not camels be the solution of one of our desert difficulties?

The idea came to him while he was crossing Death Valley, in company with Kit Carson. That hardy frontiersman was not enthusiastic when the plan was outlined, but when General Beale went to Washington to propose it, his reception was different. Jefferson Davis, who was the Secretary of War, felt that the proposed camel corps might be practical.

An appropriation was secured, and in 1856 two shiploads of camels were brought from Tunis to Indianola, Texas. The camels were duly taken to the desert. General Beale reported to the War Department that they did their work well, but the soldiers who drove them were not so sure. One who wrote of the complaints made of the camels said:

He could travel sixteen miles an hour. Abstractly, this was a virtue; but when camp was struck in the evening and he was turned loose to sup upon the succulent sagebrush, either to escape the noise and propinquity of the camp or to view the country, he was always seized with a desire to take a *pasear* of twenty-five or thirty miles before supper. While this took only an hour or two of his time, it involved upon his unfortunate driver the necessity of spending half the night in camel chasing; for if he was not rounded up there was a delay of half the next day in starting the caravan. He could carry a ton—this was a commendable virtue—but when two heavily laden "ships of the desert" collided in a narrow track, as they always did when an opportunity offered, and tons of supplies were scattered over miles of plain and the unfortunate pilots had to gather up the flotsam of the wreck, it is not strange that the mariners of the arid wastes anathematized the whole camel race from the beast the prophet rode down to the smallest imp of Jefferson Davis' importation.

The complaints were so many and so vigorous that, when the absence of Jefferson Davis from the Cabinet left General Beale the sole defender of the camel against the mule, which the soldiers declared was the only dependable beast of burden, the ships of the desert were condemned and sold—all except those that strayed away from the army posts. For many years the wandering animals were seen here and there in Arizona and New Mexico, and to this day there are whispers of the appearance of some lonely specimen so far away that it is difficult to tell whether the sight is real or imaginary.

To-day there is something better than a camel in the desert—the automobile routes of travel are plainly marked, and difficulties are not great. The Secretary of the Utah State Automobile Association calls attention to the fact that the automobilist knows "there are long stretches of country with nothing but sagebrush and jack rabbits"; but he adds that the tourist "also knows that as a general rule he will make more miles per day than over any other section of the United States where the roads are not improved."

Those who would leave the beaten tracks need to be careful, but their care will be wonderfully rewarded. Those who have a constitutional inability to be careful should follow the advice given in the Geological Survey's Water Supply Paper No. 225:

> With some persons the faculty of getting lost amounts to genius. They are able to accomplish it wherever they are. The only suitable advice for them is to keep out of the desert. There are safe places in which to exercise their talent.

CHAPTER XVI

WHERE MONTANA HISTORY WAS MADE

NEAR the point where the Northern Pacific Railroad approaches the Yellowstone River from the east, at Glendive, in Eastern Montana, Lewis and Clark had one of the unique experiences of the return trip from the Pacific in 1806. The party of explorers was descending the river in boats when they were compelled to pause while a herd of buffalo, estimated to contain 80,000 head, crossed the river.

To the north of Glendive forty thousand acres of Montana land have been irrigated by the Lower Yellowstone Project of the Reclamation Service. The highway that follows the river affords a satisfying view of the work done and the results achieved, and so furnishes a good introduction to Montana for those who have thought of the state as anything but an empire of fertile lands.

In many places sagebrush and cottonwood as features of the landscape have given way to grain and alfalfa and sugar beets. Even on the old sheep ranges of the regions farther down the Yellowstone, dry farming has made the land so profitable for agriculture that the sheep herders, whose flocks once contained as many as forty thousand animals, have taken their departure. Soon the only reminder of them will be the many pyramids of flat stones, built by the herders to relieve the tedium of their lonely life. Specimens of these pyramids are visible from the river in the neighborhood of Hysham, not far from Billings.

Both Billings and Bozeman have the distinction of being in the midst of some of the finest land in the state. Captain Clark told of visiting, in 1806, the sites on which these towns have since been built. The explorer's enthusiastic account of the beautiful Gallatin Valley is responsible for the fact that the region of Bozeman was settled long before many other parts of the state, in spite of the fact that it was far from the route of the emigrant, and is surrounded by majestic mountains.

After leaving the valley of the Yellowstone the railroad still shows the way to valleys of astounding fertility. Famous Deer Lodge Valley is first seen a few miles after Butte is left behind. Other attractive valleys lie between Deer Lodge and the Flathead Indian Reservation, far to the north of Missoula, where 150,000 acres of land are to be made productive by the Reclamation Service. Surrounded as they are by lofty mountains, these lands of the Indians are among the most attractive in the state. The peaks of the Mission Range are before those who approach the Reservation from the south, and beautiful Flathead Lake is near at hand. From Missoula a stage road leads north, directly along the western shore of the lake, passing, on the way, a corner of the Montana National Bison Range, where seventy-five buffalo long had the run of thirty square miles of mountain and prairie.

All along the route from Glendive to the northwestern border of Montana there is surpassing interest for the geologist. He will pause to look curiously at Signal Butte, near Miles City on the Yellowstone, which is in plain sight either from the railroad or from the highway. Officers from Fort Keogh once resorted to this butte when they wished to send a heliograph mes-

sage to the Black Hills, 175 miles away, or to receive word from those who signaled from there. The butte is a part of the curious Lance formation which has been so fruitful for the skeleton hunters from the museums, yielding, among other things, skeletons of the Triceratops, a curious creature with three horns. The skeleton in the National Museum at Washington is twenty feet long and eight feet high. Then there was the Tyrannosaurus, or giant lizard, which was forty feet long and when standing on its hind legs was perhaps eighteen feet tall. A mounted skeleton in the American Museum of Natural History, New York, shows what must have been the general appearance of this lizard of the Montana Bad Lands.

But perhaps in these days of agricultural development the most interesting geologic feature of Montana is a few miles beyond Helena, where, under thousands of acres, lies a bed four feet thick of rich phosphate rock. Yet it is estimated by the United States Geological Survey that this deposit is not much more than one-thousandth part of the beds in Montana, Idaho, Wyoming and Utah! Surely there is not much danger of a phosphate famine in this country.

It has been one of the problems of the amateur geologist to decide why the name Yellowstone was given to the river that flows from Yellowstone Park. The traveler naturally looks for yellow rocks along the river bank, but he will not find them until he enters the canyon of the Yellowstone in the Park itself. The probability is that the Indians, who alone, until comparatively recent years, knew of the wonders of the canyon, were the first to give the name to the river.

For centuries the Indians were the sole voyagers

along this stream. Then came the years when white men and the Indians shared the perils of the voyage. In 1835, George Catlin, the celebrated artist, was a passenger on a Missouri River steamer that threaded these waters. On board with him were a number of Indians who were returning to their home near the Pacific Ocean after an overland journey to St. Louis. Fortunately Catlin painted two of the Indians, Ta-wis-sis-sim-nin (No-Horns-on-His-Head) and Hi-youts-to-han (Rabbit-Skin Leggings). Those who would make acquaintance with natives of that early day have only to go to a library and examine pictures numbered 145 and 146 in the Catlin collection.

During the early years of steamboat navigation in Montana most of the voyages were made up the Missouri, but there were those who felt that the Yellowstone route to Western Montana was preferable. In 1875 Captain Marsh, on the steamer *Josephine,* pushed his way to the mouth of the Big Horn. There the effort was made to build a town which should be the transfer point for those desiring to take goods to Bozeman. A few months earlier Bozeman citizens had sent an expedition to the head of navigation for the purpose of opening a wagon-road. The expedition traveled six hundred miles during six months; had four fights with the Indians; lost three men and thirty-seven horses; killed about fifty Indians and wounded nearly one hundred more.

The projectors of Fort Pease, the name given to the settlement at the head of navigation, also had their difficulties with hostile Sioux. After standing siege as long as they could, they sent an appeal for help to Fort Ellis, near Bozeman. Finally, in March, 1876, help came, and

Fort Pease was abandoned. Three months later, at a point not many miles south of the mouth of the Big Horn, General Custer, with every officer and man in five companies, was killed by the Sioux, under the leadership of Sitting Bull. On the site of the battle is a National Cemetery where lie the bodies of 265 soldiers.

After the battle, Captain Marsh, who was then at the mouth of the Big Horn with the steamer *Far West,* raced to Bismarck with fifty-two wounded men, survivors of General Terry's battle, fought near by on the same day. The trip of 710 miles was made in 54 hours!

The country near by is full of reminders of the fatal Custer campaign. From Miles City to Rosebud the Northern Pacific follows the route taken by Custer on his way to the fatal field. Sixty miles from Rosebud is the town of Custer, another commemoration of that day of death in 1876; from here travelers in early days left the river for Fort Custer, to the south.

Five miles from Custer, at Big Horn, General Clark passed in 1806. But the most historic of the spots where he stopped is Pompey's Pillar, a little farther west. Attracted by the great sandstone rock, Clark carved his name on its face:

"Wm. Clark, July 25, 1806."

Since his visit many have followed his example, especially steamboatmen and soldiers, and now the rock carries numberless other inscriptions. A grating covers the most historic inscription of all, so that relic hunters are prevented from exercising their destructive tendencies.

In 1860 the Pillar once again became a historic spot, for in that year a member of the Reynolds Yellowstone

Exploring Expedition observed a solar eclipse from the summit. Then on June 3, 1875, Captain Marsh of the *Josephine* climbed the rock, erected a staff, bent a flag to the breeze, and left it there. First, however, he carved his name and the date on the cliff.

Other sandstone cliffs in the neighborhood were asked to bear the records of explorers and trappers. In 1863 Henry Bostwick, a member of the Yellowstone Exploring Expedition of that year, finding a tempting rock near the mouth of the Big Horn, proceeded to make himself famous:

> I also engraved my name, with the date, on a sandstone about three-fourths of a mile above camp. It will stay there for ages, and if I perish on this expedition, I have left my mark.

After the Yellowstone is left behind both railroad and highway pass on to Three Forks, where three rivers unite to form the Missouri River. When General Clark was here he named the western branch for President Jefferson, the middle branch for James Madison, then Secretary of State, and the eastern branch for Albert Gallatin, then Secretary of the Treasury. Mountains almost surround the valley of union, rising from two to four thousand feet above the plain, which is itself about four thousand feet high. The valley where the streams unite is from fifteen to twenty miles in diameter.

From Three Rivers to Fort Benton, the early head of navigation on the Missouri, is two hundred and fifty miles. And Fort Benton is twenty-nine hundred miles from St. Louis! The way leads now through comparatively level valleys, again through Black Rock Canyon, where the river narrows to half its former

width, and distant less than twenty miles from Helena. Later, on either side, are steep turreted and pinnacled walls, five miles of them, from six hundred to a thousand feet high. This is White Rock Canyon, which Lewis and Clark called "the Gates of the Mountains." From this point for thirty-six miles, the river is within the mountains. Then come the falls, and the descent to Fort Benton—the last stage in a stretch of river that well deserves to be famous.

The first view of the Rockies that make the upper Missouri River scenery so fascinating is gained from a point near Billings, one hundred and ninety miles to the east. On a clear day the peaks near the entrance to Yellowstone Park can be seen, though they are more than one hundred miles distant. From the first mountains are almost always in sight—mountains some of them with strange names like the Crazy Mountain, once the Crazy Woman Mountain, first visible from a point more than fifty miles from Billings; and the Absaroka Range, forty miles farther west. That name is explained in Hanson's account of Custer's defeat. He says that the first news of the disaster was made known to a party on the river by a Crow Indian who shouted dismally, "Absaroka! Absaroka!" "That means soldiers!" explained Captain Marsh, one of the party. But an explorer of 1863 declared just as positively that the word "Upsaroka" meant "Crow Indians." Can it be that there is no more difference between a white man and an Indian than there is between "Ups" and "Abs"?

Both railroad and highway on this route lead into canyons of all sorts and sizes, but all alluring, even

while they are forbidding. There is Rocky Canyon, near Bozeman, which leads to Gallatin Valley, and Hell Gate Canyon, with its walls of red, which leads from the Deer Lodge Valley to Missoula. Here the Indians filed across the mountains, when they sought the buffalo, or when they were on the warpath, and here the first trappers and emigrants followed where they had shown the way. For this reason the French trader called the Missoula entrance to the canyon Porte d'Enfer, or Hell Gate. Through this canyon went Lieutenant John Mullan, who was commissioned by the War Department to build a road from Walla Walla to Fort Benton. The story of that road is one of the epics of western pioneering.

In March, 1859, Congress appropriated the first $100,000 for the construction of the road. Laboriously Lieutenant Mullan guided his corps of men over the mountains, cutting his way through forests, threading canyons and climbing along mountain paths, frequently making explorations on either side of the road for a distance of many score miles. Twenty miles east of Helena he crossed the Divide through Mullan Pass, where the Northern Pacific has followed him. In all 624 miles of road were built. "We cut through 120 miles of dense forest a width of thirty feet," the pioneer wrote; "150 miles through open pines, and thirty miles of excavation in earth and rock, occupying a period of five years, and at a cost of $230,000."

In some places grass was plentiful, but there were many other places where none grew. So the road-builder sent to St. Louis for twenty-five bushels of blue grass seed, which he sowed "broadcast over the ground and through the woods, and over the prairies,

at such points as were likely to be selected as camping grounds."

The road was never much used for military purposes, but emigrants found it convenient. The builder wrote a guide-book for travelers, telling them of the road in detail, pointing out the fact that forty-seven days should be allowed for the distance between Fort Benton and Walla Walla.

When the Mullan road-builders toiled along the river valleys they discovered gold in many places, but they were too busy with other duties to heed the yellow metal. Soon, however, men came who had no purpose but to seek gold. In May, 1862, the first discovery was made, and a little later four steamboats landed emigrants and mining tools at Fort Benton. This was before the organization of Montana Territory, or even Idaho Territory; Idaho dates from 1863, and not until 1864 was Montana set aside. By that time lawlessness had become so great in many gold centers that a central government was needed.

Sites of some of the early gold discoveries may be visited easily. In the Prickly Pear Canyon, seven miles from Helena—near the present delightful canyon road that leads from the Missouri River to the city—were rich placers. Bannock and Deer Lodge mark later discoveries.

Grasshopper Diggings was not far from Alder Gulch, the site of another bonanza. There a town was founded which, at first, was named Varina, in honor of Mrs. Jefferson Davis. But Varina is not now on the map, though the town is there. The name was soon changed because a resident who was asked to draw up some legal papers absolutely refused to write the name

THOMPSON FALLS, MONTANA

POMPEY'S PILLAR, MONTANA

CABINET GORGE, IDAHO

Varina; instead he wrote Virginia City. So Virginia City it was when the town became the first capital of the territory, and Virginia City it is to this day.

The organization of the territory put an end to the most unsatisfactory conditions existing when there were hundreds of lawless men, such as always gathered with the law-abiding men at a pioneer mining camp. After the organization of Idaho, eighteen months passed before the first copy of the laws was received at the gold diggings of Southwest Montana, and by that time the new territory had been set apart by Congress. Then it was no longer possible for bodies of miners to get together and agree—as did one party of prospectors in 1863, according to the testimony of the leader—that each member of the party, as discoverers, should be "entitled to two claims of two hundred feet each along the gulch—*viz.*, a discovery claim, and a pre-emption claim in the main gulch, a bar claim, a hill claim, and a patch claim." After telling of this generous provision, the recorder added, honestly, "I never knew what a patch claim was, but I think that it meant all you could grab, after you got the other four claims."

When gold was discovered near Helena in 1864 the growth of the new city was so rapid that within two years the town had a population of 7500. Within four years sixteen million dollars' worth of gold had been been taken from Last Chance Gulch in Prickly Pear Canyon.

Copper has long taken the place of gold as the chief mineral product of Montana, and the smelters of Butte and Anaconda and Great Falls rival in interest the mountains and the canyons of the western part of the state.

After the rich copper region is left behind the glories of valley and summit once more have chief claim to the attention of the visitor. The highway from Helena, after leaving Butte and Anaconda, passes on through Deer Lodge to Missoula, following, in general, the route of the Northern Pacific, and revealing vistas of glory that must have been the delight of the Indians who roved over this favored region, as they are the delight of their successors.

Missoula, just beyond the western limit of Hell Gate Canyon, is in a valley defined by mountains whose slopes, curiously marked by a succession of parallel ridges, show that there was once a glacial lake where the town is built, and that this lake, by successive recessions, indicated by the various beach lines on the mountains, decreased in depth from at least one thousand feet until it disappeared entirely.

One hundred miles northwest of Missoula there is yet water in abundance. At Thompson Falls Thompson River leaps fifty or sixty feet, carrying such a volume that the eyes of engineers as well as lovers of beauty have long been turned to the stream. It has been calculated that forty thousand horse-power can be developed at this point when full advantage is taken of the opportunity presented.

Thompson Falls is headquarters of the million-acre Cabinet Forest, one of the smaller forest areas in a state that has, all told, a larger acreage under the control of the United States Forest Service than any other state except Idaho and California. On the summit of a hill on the right of Thompson Falls is a steel tower where, during the fire season, a warden keeps vigilant guard, Through his powerful glasses he can see for a distance

of fifty miles in any direction, and he is able to give warning of many incipient fires in time to prevent widespread destruction. The visitor to the state who secures the view from the tower is fortunate.

Thompson Falls, with its power plant and its forest warden, lies to the north of the point where the Mullan road crossed over into what is now Idaho, passing by beautiful Cœur d'Alene Lake. That curious name, by the way, meaning "Heart of an Awl," is said to have been given by Indians who objected to the hard bargains driven by the French traders. A little to the north, on the route of the Northern Pacific, is the larger Pend Oreille Lake, in its setting of rugged mountains, where a steamer is ready to help the visitor penetrate to the farther recesses of this gem of the state that—on the map—looks like a great easy-chair, and is more than twice as large as Pennsylvania.

Fortunately Pend Oreille Lake has a more pleasing story connected with its name than its sister body of water to the south. Pend d'oreille is short for pendant d'oreille, meaning earring. But there are two stories for the application of the term earring to the lake. Some say it was because it is shaped like an earring, but others insist the reason was that Indians who wore earrings lived on the shore. Take your choice; either explanation is good!

CHAPTER XVII

ON THE TRAIL OF LEWIS AND CLARK

"Westward the star of Empire takes its way,"
When Bishop Berkley wrote, was very true.
But were the Bishop living now, he'd say
That brilliant star seems *fix'd* to human view.

From Eastern hives is filled Pacific's shore—
No more inviting sunset lands are here:
The restless throngs now backward pour—
From East and West they meet, and *stop right here.*

THE son of Montana who quoted these lines more than forty years ago must have been a relative of the over-enthusiastic boomer who, in writing a prospectus of the rich Musselshell country in the central part of the state, spoke of the fact that the valley had unoccupied lands "enough for millions of farms." Later he changed his figures to "tens of thousands."

Usually, however, the loyal citizen of the mountain state whose princely domains stretch nearly eight hundred miles from east to west is not so ready to revise his figures; he feels that he can hardly make claims too great, especially if he is talking of the fertility of some of the valleys or of the scenic splendor of its mountains and canyons, its rivers and cataracts. Thus he shows himself a worthy successor of the Crow Indians, who declared that "the Great Spirit only looked at other countries, but lived in Montana all the year." The Sioux were not always on good terms with the Crows, but when it came to a question of their wonderful territory's advantages they had no quarrel with them; these brave Indians were resigned to the thought of death anywhere else, but to die in Montana made

McDERMOTT LAKE, GLACIER NATIONAL PARK

ON THE TRAIL BETWEEN ST. MARY'S LAKE AND LAKE McDERMOTT, GLACIER NATIONAL PARK
POLLOCK MOUNTAIN ON LEFT, MT. GRINNELL ON RIGHT

death delightful: the Great Spirit and the happy hunting grounds were so near at hand.

When Lewis and Clark wrote the story of their expedition of 1805 up the Missouri River, on the way to the Pacific, even their prosaic accounts were interrupted now and then by wondering remarks about the variety and beauty of the panorama that was unfolding before them daily. Since later explorers have followed this example, no traveler who makes his way across the state in these later days need think it necessary to restrain his enjoyment or repress his exclamations.

Many of those who cross Montana find it such a pleasant experience to be on the trail of Lewis and Clark, to look on some of the very marvels beheld by these explorers, that it is not at all difficult for them to appreciate the enthusiasm of an explorer of 1872, who, following the Missouri River for some distance toward its source, noted on a little island a cottonwood tree, in whose branches was a black eagle's nest. As he looked at the nest an old eagle left it, soared above his head, and alighted on a rock within a hundred feet. Noting that the bird's feathers were "soiled, torn and otherwise old looking," he decided that probably this was the same eagle, whose nest in the same position, on the same island, was seen by Lewis and Clark in 1805.

For those who wish to compare notes with President Jefferson's explorers, it is unfortunate that the Great Northern Railroad departs from the Missouri River—and so from the route of Lewis and Clark—at its junction with Milk River, taking a route that, so far as the map is concerned, looks like the continuation of the Missouri, though a comparison of the two streams does not encourage the raising of the question which of the two is the Missouri.

Early navigators of these waters were troubled by a sandbar at the mouth of the Milk River. On this bar, in 1866, the *Luella,* laden with miners and gold dust, grounded heavily. One of the miners, who was leaning over the rail watching the efforts made to dislodge the boat, fell overboard. There were but two feet of water, but the current was swift, and the weight of gold dust in his belt was great, so he was swept away in an instant, and was never heard from again.

Not far from the same spot the *Stockdale* had a startling experience during the following season. The captain knew he was in the path of the buffalo herds seeking southern pasturage for the fall and winter, but he was amazed by the appearance, at Elk Horn Prairie, of hundreds of thousands of buffalo that crowded the north bank for several miles, back to the bluff. On came the beasts, their leaders plunging into the river ahead of the steamer. Soon they were packed so closely in the water that the steamer could not move. The vessel staggered from the shock of their impact, and the buckets of the stern wheel were endangered by their rush. For several hours the delay continued; all the time the buffalo were crossing the river by thousands, and were disappearing beyond the bluffs on the south bank.

The buffalo have disappeared, but other marvels have taken their place. Milk River is itself one of these marvels, now that the United States Reclamation Service has taken a hand in making it behave. Once the lands along the valley were parched and dry, though by all precedent the river should have had abundant water supply from the melting snow of the mountains beyond the headwaters of the river and its tributaries. But the water went toward the Arctic Ocean instead of

toward the Mississippi, its natural outlet, all because in ages of which geology tells an ice sheet pushed down between the river and the mountains. But the genius of the water engineers was sufficient to overcome the handicap of the ice-made dam, while the diplomacy of statesmen helped to solve what might have been the insurmountable difficulty of making water flow over an international boundary line when there were folks in Canada who wanted it. The story of the Milk River Irrigation Project, which utilizes the water from the lakes in Glacier Park in a wonderful way, will repay reading, in detail.

The first steamer whose captain pushed on past the north of Milk River, to Fort Benton, was the *Chippewa,* and the date was 1859. In 1860 there were two arrivals at what became the head of navigation. But Fort Benton had no steamer in 1861, though the *Chippewa* was on the way. A deck-hand, wishing to steal a drink, went down into the hull with a lighted candle and set fire to the boat, with its twenty-five kegs of powder. This was one of the first of many disasters on the Upper Missouri.

In those days the venturesome steamboatmen and traders had to brave many dangers in the navigation of these waters. For years Indians kept the white men guessing, and there were casualties without number. Other pests were much smaller, but perhaps they were even more annoying. Anyone who has experienced the appetite and persistency of the Missouri River mosquito will appreciate the conversation with a resident who was plowing on the bank, as reported by an explorer of 1872 to the Montana Historical Society:

I observed that the mosquitoes were very annoying on this part of the river. "Oh," said he, "this is nothing," at the same time bringing up his whip that he

used as a fly-brush; and smacking his puffed and swollen neck and pimpled forehead with the flat of his other hand. "You ought to (smack! whack!) see the mosquitoes (whack! smack!) in Southern Illinois, where I (smack! whack!) came from."

Fort Benton was long a central point of the fur industry. Later it was a distributing point for the gold and silver mines of Western Montana and Idaho, as well as a gathering-point for miners who wished to begin the long passage to St. Louis. One early vessel carried more than a million dollars in gold direct through the Indian-infested wilderness. In 1867 thirty-nine steamers arrived and departed, and about ten thousand passengers were carried. One of these thirty-nine boats made $42,594 in five months.

From Fort Benton a good road—the old stage road toward Helena—leads to Great Falls, that splendid barrier to the navigation of the Missouri so vividly described by Lewis and Clark. Rather it is one of a series of barriers, including one fall of fifty feet, another of ninety feet, and rapids and cascades of all sorts and sizes. These falls were as fatal to the migrating buffalo as they were to the hopes of the steamboatmen; as late as 1872 a traveler noted numerous dead animals about the falls; at one place he counted twenty-six carcasses in a heap. Most of them had been swept over the falls.

Northwest from Great Falls, a highway leads to the reservation set apart for the Blackfeet Indians, who are fortunate in having a location directly alongside of Glacier National Park. There the desire to live in the land of mountains and lakes, where there is always hunting and fishing, finds ample gratification.

The 1534 square miles now occupied by Glacier Park,

VIEW DOWN FLATHEAD RIVER FROM KNOWLES, MONTANA

GRINNELL GLACIER, GLACIER NATIONAL PARK

once belonged to the Blackfeet, but, following the copper discoveries of 1890, Congress bought the district. Soon it was learned that the copper deposits were small, but that here, wonderfully compacted, was some of the world's most marvelous scenery. Here in satisfying abundance are rugged mountains, snow-clad, with great plains on their flanks; several hundred blue lakes fed by these glaciers; cliffs, gorges and waterfalls. Here are rivers that flow from the Continental Divide to the Pacific, to the Arctic, to the Gulf of Mexico. Merely to read the list of the names of some of them is enough to make the eyes glisten. There is Cut Bank River, with fir-clad shores; Two Medicine Lake; Avalanche Lake, whose precipitous walls rise thousands of feet; St. Mary's Lake, with Going-to-the-Sun Mountain beyond; Grinnell Lake, and its parent, Grinnell Glacier, on the heights above, and wild Ptarmigan Lake. Those who want to see ice in August have only to seek Iceberg Lake. Those who want the pleasure of naming a lake or a trail or a mountain can satisfy themselves, for so rich is the park in special features that no one has had time to name them all.

John Muir came this way once, and when reluctantly he turned from the picture, he said: "Give a month at least to this precious reserve. The time will not be taken from the sum of your life. Instead of shortening it, it will indefinitely lengthen it."

Some day Glacier National Park will be as world-famous as the Yosemite or the Yellowstone, and pilgrims from all over the world will turn thither. Fortunate will be those who see it then, but more fortunate are those who see it now; to them may be given the opportunity of seeing it again and yet again.

CHAPTER XVIII

"THE SUMMIT OF THE WORLD"

THE STORY OF YELLOWSTONE PARK

IF the Bannock and Crow Indians who guarded jealously the geysers and lakes of the Yellowstone had been told that, in the opinion of some, there were more wonderful spots than in their prized valley, probably they would have laughed. They know that this corner of what is now Wyoming was unsurpassed, and their admiration was expressed by the name they gave to it, "The Summit of the World." Long time they tried to keep the knowledge of the Valley of Wonders from the hated white men, and in their efforts they were helped by the forbidding surroundings of what is to-day known as Yellowstone Park. For there are mountains on all sides—the Shoshone Mountains, the Wind River Mountains, the Gallatin Range, and finally the sinister Tetons that dominate the southwestern border.

In 1807, however, a white man named Coulter penetrated the mountain barriers and entered the hidden region beloved by the Indians. On his return he told of some of the things he had seen, though he did not dare to tell all the truth. Even then his associates unbelievingly referred to the valley as "Coulter's Hell."

On various occasions miners and trappers followed Coulter. They, too, were called liars by their friends, who thought that their stories of burning plains and spouting springs were figments of the imagination. The authors of the tales, feeling that they were not believed, decided that they might as well lie, so there

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GRAND CANYON OF THE YELLOWSTONE, FROM ARTIST POINT. GREAT FALLS ARE NEARLY TWICE AS HIGH AS NIAGARA FALLS. EAGLES BUILD THEIR NESTS ON PINNACLES OF ROCK ON THE CLIFF

GIANT GEYSER, YELLOWSTONE PARK. SPOUTS AN HOUR AT A TIME, AT INTERVALS OF FROM SIX TO FOURTEEN DAYS. WATER REACHES HEIGHT OF 250 FEET

soon were current stories that savored of the Arabian Nights. They told of a company of trappers who escaped from pursuing Indians "by traveling night after night by the brilliant light of a large diamond providentially exposed on a mountain." The early historians of the valley who recorded these wonder tales recounted also the rumors of a region which instantly petrified whatever entered it. "Rabbits and sage-hens, even Indians, were standing about there, like statuary, among thickets of petrified sage-brush, whose strong branches bore diamonds, rubies, sapphires, emeralds and other gems by the thousand, as large as walnuts." Possibly the basis for this story was the sight of animals killed by the carbon dioxide of Death Gulch, where bear and elk, as well as smaller quadrupeds, have been found asphyxiated.

In 1859 an unsuccessful attempt was made by a government expedition to enter the valley. The leader, Colonel Reynolds, was unable to reach the basin because the rocky mountain barrier hindered him when he approached from the East, and a barrier of snow was in the way when he made his trail from the West.

For twelve years more these rumors persisted. Then a company of Montana officials and citizens determined to learn what was back of the stories. They toiled over a mountain, which they named Mount Washburn, and then came to a valley of hot springs. Later they stood on the edge of the Grand Canyon of the Yellowstone. After traveling along the edge for several miles, two explorers made their way down to the river, more than a thousand feet below. Thence the journey was continued through the scenes that have become familiar to tourists, but progress was far more difficult than it

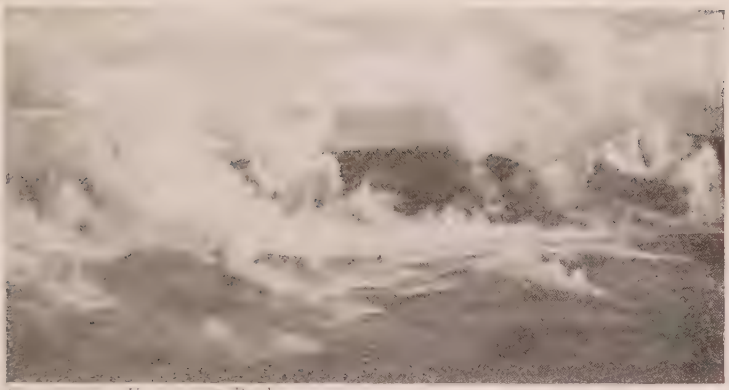
is to-day. Over rocks and fallen trees they went, picking their way along precipices, never knowing what danger would be in their path. Once when a man was passing near the edge of a boiling alum spring, the crust broke under his feet. For an instant his comrade feared that he would lose his life, but he quickly fell backward on the unbroken crust and so avoided the awful death.

One day a member of the party was lost. Search for him was made in vain. For thirty-seven days he wandered in the wilderness, without food, except what roots he could find, without fire, except when he could kindle a flame from a lens of his field-glasses, without a knife, until he fashioned one from the tongue of a buckle. When he was rescued he was in a pitiable condition.

The story of the "Thirty-seven Days of Peril" as published in *Scribner's Magazine* for November, 1871, should be preserved as one of the classic narratives of American adventure. One of the interested readers, an Iowa man, could not put the Yellowstone out of mind. Soon he became one of the pioneers who proposed to make comfortable the travelers who sought the valley, and for many years he continued the service, inspired by the tale of Thomas C. Everts.

Mt. Everts, two miles east of Mammoth Hot Springs, is the memorial of the hero of the thirty-seven days of wandering.

Those who follow in the steps of the unfortunate Everts may enter the Park from the north, within sight of the lofty Electric Peak; from the west, where the Tetons lift their heads; from the east, by the wonderful Cody Road, or from the south, by way of Jackson's Hole. They may come by train from north or south or east,



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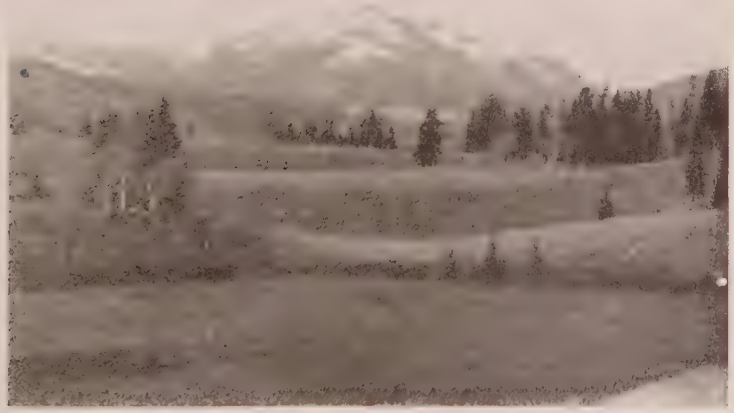
NORRIS GEYSER BASIN, YELLOWSTONE PARK



ELECTRIC PEAK, NEAR GARDINER ENTRANCE TO YELLOWSTONE PARK

or they may take the highway from Salt Lake City or the impressive road that leads more than three hundred miles across the mountains of Montana all the way from Glacier Park.

There are those who try to devote a day or two to the 3575 square miles of the park, as if in this time they could give even a passing glance to lakes and geysers, canyons and mountains, petrified forests and mud volcanoes. It is not enough to see these things once; wiser are those who return after the first visit to wonder at the colorings of the rock walls of the canyon where bronze and orange and scarlet unite with green and pearl and pink, forming a picture that rivals the rainbow, and tells of kinship with the sunset; to stand in the Norris Geyser Basin, or its associates, where more than forty geysers, at regular or irregular intervals, spout and gush and bubble; to follow the trails and climb the mountains, or to camp in the forests and watch the antelope, the bison, the moose and the mountain sheep that have found asylum in a region where no one dares to harm them, where many of them lose the fear of man because man no longer pursues them.

And after such a visit, prolonged to many days or even weeks, it will be possible to laugh intelligently at the Englishmen of whom an early visitor to the Park told. "This is not a park," the disgruntled man said; "there is nothing here worth notice but the geyser and the canyon." He refused to visit Yellowstone Lake, saying, "It is nothing but a body of water, surrounded by land, which one can see anywhere, without going so far." He looked at the Hot Springs, and said, with superior air, "What does that signify? It is only steam!"

Yes, only steam, and color, and rock, and water, and trees; only canyons and precipices, fire and brimstone, springs and paint-pots, pools and cascades. But all these beauties and a hundred more have been thrown together with prodigal hand, and combined with a skill that makes one gasp and find kinship with those of the ancient day who said that here was "The Summit of the World."

CHAPTER XIX

FROM THE YELLOWSTONE TO WALLA WALLA

THE crooked course of the Snake River, first the North Fork, then the main stream, from the western border of Yellowstone Park, to Lewiston, the old capital of Idaho, is a route of absorbing historic interest as well as of tremendous scenic grandeur. The first one hundred and fifty miles of the route was unknown to the explorers who threaded this marvelous western country on the way to the Pacific, but from Fort Hall to the point on the western boundary of Idaho, northwest of Boise, was the pathway of Hunt on his way to Astoria in 1810, of Bonneville in 1831–33, and of Fremont in 1843, and of those who followed them over the old Oregon Trail—hunters, trappers, missionaries, home-seekers, prospectors and miners.

As a rule the travelers of an earlier day had so much leisure to enjoy the varied natural features of this Snake River wilderness that they wearied of their opportunity long before it was terminated by entrance on the country where the last barrier of mountains separated them from the valleys of the Pacific Coast.

For the satisfaction of those who follow them in these later days, both the friendly highway and the convenient railroad lead from the western boundary of the Park, just over the Montana line, into Idaho by way of glacier-sculptured Reas Pass. The pass is nearly seven thousand feet high, but only a few miles to the south are peaks that are much higher, notably Sautelle Peak, which is more than ten thousand feet.

For those who follow the Snake River, mountains are not the only feature worthy of attention. Others come in such quick succession that the passenger on the train wishes that he could be in an automobile, and the man in a motor is tempted to forget his purpose to make a certain far-distant point by nightfall. Henry's Lake is succeeded by Henry's Fork of the Snake, which soon has an immense waterfall, and, a mile farther up stream a fall still higher and more imposing. Between the falls is a canyon whose walls are 250 feet deep. Warm River with its swirling waters is near until the route passes out of the Douglas firs of the Targhee National Forest. Soon, to the east, the Tetons show their rugged peaks, one of which, Grand Teton, has been conquered by mountain climbers but two or three times. And all this, with numberless attractions of interest that must take minor place on this compelling trip, within a distance of thirty or forty miles!

Still more canyons and waterfalls mark the route to the south. St. Anthony is built by a narrow canyon where the Snake narrows to fifty feet and the rapidly falling water churns through the straitened passage, though the stream widens to 800 feet immediately below. Idaho Falls has a similar narrow canyon, formed by the constant recession of the falls into the lava that overlies the whole country roundabout. The pioneers had reason to remember this point, because a man who had an eye to the main chance built across the canyon a toll-bridge that brought him in a good income.

Irrigation ditches, fruitful orchards and fertile fields, then the Fort Hall Indian Reservation, with its miles of sagebrush that show what all the land would be but for irrigation, divide the attention for many

miles. The headquarters of the Fort Hall Reservation are at Fort Hall, built on the site of the fort that marked the junction of the trail to Oregon and the trail from Utah to California. This fort was visited in 1836 by Dr. Whitman, pioneer missionary to Oregon, whose name has been connected in popular story with the winning of the Oregon country for the United States, though many sober-minded historians insist that his winter's ride from Walla Walla to St. Louis, the first part of it to Fort Hall, did not have the importance that has been assigned to it.

What a chapter of stories both grave and gay could be written of the pioneers who labored through the Southern Idaho country! Unfortunately there was no historian to tell of the men and women who passed Fort Hall. Rarely, however, a record was made by some member of a party who was not afraid of the pen. Most of the stories are so prosaic that it is evident the writers were unconscious of the heroism of those who journeyed over the mountains to Oregon. One humble traveler told, however, of a maiden lady in his company who was determined to keep up her particular home ways. She had fifteen flower pots with house plants when she started, but she had to part with them in the desert. "She had a looking-glass and used it as regularly as if she had been at home." She had a broom, and whenever camp was made she always swept a place and put down a piece of rag carpet. Further, she would set her table regularly and carried all the way her grandmother's silver tankard, with which she decorated her table. If there was a flower to be found, or even a bunch of grass, she always had a bouquet in that tankard.

It was a woman who told another typical incident of the days of the forties:

A party of four men who were riding on horseback joined our company when we were on the plain. I overheard one of them say one night, "Sir, I am a true laborer, earn that I eat, get that I wear." So I called out, "Who is quoting Shakespeare out here in the wilderness?" "What woman can there be out here who knows Shakespeare when she hears it?" said he. So after that we were great friends. He had once been a college professor in Edinburgh, Scotland, very learned in everything and could speak seven languages, yet he was jogging along on an old mule and looking like a scarecrow.

All the way from Fort Hall and Pocatello to Shoshone Falls and beyond the Snake flows through what is, with one exception, the greatest lava plain in the country, with an area of perhaps twenty thousand square miles. The thickness of the bed is not known, though at Shoshone Falls, where the river makes a perpendicular descent of two hundred and ten feet, it is seen to be nearly seven hundred feet from the surface to the lower limit. There are many cataracts and rapids almost without number from this point to the junction of the river with the Clark Fork of the Columbia, but all of them are of comparative insignificance in comparison with the parent of them all.

Snake River, with its length of nine hundred miles, and its tributaries, is one of the tremendous factors in the irrigation of land that would otherwise be given up to sagebrush and barren lava wastes. The Minidoka Project and the Payette-Boise Project, both among the country's most spectacular water schemes, are on the route described in this chapter. The Arrowroot Dam at

OLD BEAVER DAMS OF NORTH MAINE'S PAST BEFORE THE BUILDING OF THE DAM

BEAVER DAM BUILT IN 1921 ON THE SITE OF AN OLD DAM

SHOSHONE FALLS, IDAHO

Boise is seventy-one feet higher than the famous Roosevelt Dam in Arizona. Through the beneficent influence of the water impounded here Boise is becoming one of the greatest potato sections in the country.

All the country is of volcanic origin, and is full of reminders of this origin. Near the banks of the river, at many places, are what have been called volcanic bombs, elongated projectiles that in some remote age were shot as plastic lava from the crater of a volcano. In falling from a great height they took the shape that makes them resemble nothing so much as a snake. Thus they are fit companions for the river whose tortuous channel gave it the name Snake, though some have called it Shoshone.

Fortunately the name Shoshone still clings to the falls of which an explorer of the United States Geological Survey said in 1868 that they were among the greatest of America's cataracts. Though the volume of water is not so great as that of Niagara, the approach and the surroundings are far more impressive. Above the falls the river, two hundred yard wide, is deep down in a dark canyon. Cataract follows cataract for some distance, but all are insignificant in comparison with the great fall itself, which is in the shape of a horseshoe, more than one thousand feet around the rim.

In the country between Fort Hall and Shoshone Falls, a pioneer of 1849 had an unusual experience that gave him a thorough understanding of the lava formations as well as of the sagebrush. With four companions he tried to cross the river to secure a horse from Indians. They made their way to the water by means of a steep ravine cut in the lava cliff. Though it was dark when they reached the river, they decided to ven-

ture into the rock impeded, rapid water. After tying their shirts and moccasins to their necks, and hiding the remainder of their clothing, they entered the stream. The trip was made without adventure, and they returned in safety.

But one of the men failed to find his clothing when he landed. Chilled through, he decided to approach one of the campfires near by. "My wardrobe consisted of one cotton garment and a pair of moccasins," he described his predicament. "Though the season was midsummer, the night was cold, for we were more than four thousand feet above the sea, and a sharp wind was blowing from snow peaks that were within plain sight in the daytime. I had to move very briskly to keep warm; and for fear of losing my direction, I followed a straight course without turning aside for ravines, stones or sagebrush. In a few minutes I saw that I had selected the wrong fire. But I went on. It proved to be eight miles to the camp. The man on guard heard me approaching and called out, 'No Indians in camp at night.' When I went nearer he called out, 'Stop, or I'll shoot. No Indians in camp at night.' 'I'm as white as you are!' I called to him. 'White men don't go about that way,' he replied. 'This one does, but I have had enough of it,' I said. Then I was received with laughter."

In the morning he found his clothes in another ravine than that in which he had searched for them.

"No need to ask me if I know what sagebrush is after that night," he said, grimly, when telling the story.

Not far from the same spot the Snake proved disastrous to the party of Wilson Price Hunt, who was in charge of the land expedition to Astoria. In October,

1810, the men attempted to ascend the rapids where rocks made the passage most difficult. A boat was wrecked and one of the men was drowned. At this point the river was but thirty feet wide, and the lava walls were two hundred feet high. The waters within were so troubled that Hunt called the spot the Caldron Linn. Exploring parties sent down the river reported that for many miles it "presented the same furious aspect, brawling and boiling along a narrow and rugged channel, between rocks that rose like walls."

From this point they had to travel nearly five hundred miles on foot.

In the days before the railroad was built through the Snake River valley from Ogden to Boise, traveling was expensive. The stage fare between the towns was $100 for the distance of less than four hundred miles. After the completion of the Central Pacific Railroad one man figured that it was cheaper for him to go to Walla Walla by rail to San Francisco, by steamer to Portland, and up the Columbia, than to go overland by direct route.

Boise, the successor of Lewiston, which originally had the honor of being the capital of Idaho Territory when Montana and part of Wyoming were included in its bounds, is so beautifully located that the citizens feel it would be worth even a trip by stage for a few hundred miles to reach it. Now that it is not only on the railroad but on the main route for automobile travel from Kansas City to Portland, they feel very properly that there is no excuse for passing by its whole-hearted invitation to stop and learn what Idaho hospitality is.

At Boise they tell interesting stories of the days of

1862 when the first gold discoveries in Idaho were made in the country to the south. One of the richest quartz lodes was found unexpectedly. The story is that two men, on the way to Boise, were talking of quartz. One man said he did not know quartz when he saw it. His companion therefore picked up several pieces from the trail and showed them to him. The quartz he dropped into his pocket without thinking. Some time later the men were at Bannock, where they were speedily in difficulty because their horses were stolen and they were left penniless. Idly the man who had the quartz showed it at the express office. The eye of the agent glistened. "I'll buy you a horse if you'll take me to the spot where you found that rock," he said. The place was found, the mother lode on the hill was discovered, and soon the agent and his guide were taking large dividends from the mine.

Unfortunately the story does not tell how fared the man for whom the quartz was picked up!

All along from Boise to Lewiston—named for the explorer Lewis—the Snake continues its course through volcanic country, flowing at times through canyons, frequently choosing its way over rocks, and always making a trip by its waters worth while. Mountains near by and farther away, as well as tributary streams and bordering forests, give variety to the expedition to the town that is close to the site of the station where Dr. Spalding began his work among the Indians at Clearwater. Here a pioneer mill was built, whose millstones were brought forty miles from the quarry on a raft, and here the first printing press in the Oregon country was set up. That press is preserved in the rooms of the Historical Society at Portland, while one of the mill-

stones is among the treasures of the University of Idaho at Moscow.

Some of the best of Washington's scenic highways lead from Lewiston to Walla Walla, while steamers reach from this head of navigation down the Snake and Columbia rivers to Portland. The overland route passes through canyons and hills, past great grain farms and fruit orchards, over a divide that affords a view for miles back toward the Snake River. The final stage is twenty miles over the macadam Dixie road, through the famous wheat fields and apple orchards of Walla Walla County to Walla Walla, the Indians' city of many waters, so named because, in the mountains near by dozens of streams have their source.

From Walla Walla many admirable highways lead in all directions. On one of these, the Inland Empire Highway, seven miles from the city, at Whitman Station, is the monument to Marcus Whitman, the pioneer missionary who, with his wife and children and a number of others, was killed by the Cayuse Indians among whom they had lived so many years because, when the Cayuse were dying of a strange sickness, they declared that Whitman was killing them off that he might own the land for the settlers who were flocking to the beautiful valley!

CHAPTER XX

FROM GREAT SALT LAKE TO SACRAMENTO

ONE who sees Salt Lake City to-day in its glorious setting of mountains can hardly credit the fact that on July 24, 1847, when Brigham Young came to the chosen site for the City of the Saints, one of the three women with this advance party said, "Weak as I am, I would rather go a thousand miles farther than stop in this forsaken place."

There were many weary days before the new city began to present a homelike aspect. The sight of the Stars and Stripes waving from Ensign Peak on a spur of the Wasatch Range, was the first satisfaction for the homesick; though the territory was still a part of Mexico, the leader of the expedition proposed to fly the flag of his country. Then, little by little, difficulties were overcome, the broad streets were lined with houses, and the lands along the Jordan were cultivated. Less than a year after the settlement, a plague of Rocky Mountain crickets threatened to devastate the growing crops that made the valley begin to look inhabited. There seemed to be no relief, when suddenly a great flock of gulls swooped down from the sky, and devoured the crickets. To this day the gull is looked upon with veneration in Utah.

There is no better spot from which to gaze on the widespread beauty of Salt Lake City and its surroundings than from the side of the staff on Ensign Peak, where the flag still floats on holiday occasions. Below are the farms and orchards in the valley of the Jordan.

East of the city are the snowy peaks of the Wasatch Range, while over the Jordan the heights of the Oquirrh Range stretch far above the snow line. Far beyond the city lies in majesty Great Salt Lake. Here and there among the mountains are canyons and chasms and miracles of rock carving. And the central feature of the picture is the city itself, which is as remarkable as its surroundings.

Ample provision for seeing the details of the beautiful country both south and north of Salt Lake City is made not only by admirable roads but also by interurban lines that extend two hundred miles in all. The Garden of Utah, south of the city, is traversed by one of these roads, which is on the banks of Jordan between the Wasatch and the Oquirrh and goes past Utah Lake, a body of fresh water that is one of the richest gems of Utah's varied jewel casket. The glaciers of Mount Timpanogas feed the blue lake which in turn gives the Jordan its waters that make the bordering acres a billowy sea of green. To the west of the Jordan, not far from the south shore of the lake, the remarkable open cutting copper mines in Bingham Canyon are a curiosity that should be seen before the return to Salt Lake City.

For the thirty-seven-mile trip along the Wasatch Range from Salt Lake City to Ogden, railroad, highway and electric line give unrivaled opportunity for seeing the rugged country. An enthusiastic motorist has called the route between the cities "America's best forty miles of scenery." His boast is not without reason. There is a warm lake, fed by springs, and there is a valley made fertile by the deposits in the bed of the ancient Lake Bonneville, the great fresh-water lake that once

covered a large part of Utah as well as parts of Nevada and Idaho. The upper beach line on the mountains on the left indicates that the road was once eight hundred feet under water. A lower beach line, plainly visible, shows that the lake was lowered three hundred feet when an outlet was cut to the north, so that the waters of the lake flowed through the Snake to the Columbia. Geologists tell how the elevation of the Sierra Nevada Mountains became responsible for cutting off moisture from the Pacific Ocean, and in consequence Lake Bonneville slowly dried up until it became the Great Salt Lake of to-day.

One of the choice views on the route is found a short distance from Ogden on the high ground near the center of the peninsula that juts into the lake. All about are lands that less than a generation ago could have been bought for five dollars an acre, for they were thought to be barren sand; to-day they are worth five hundred dollars an acre or more.

Far to the right, beyond Ogden, is the pass in the Wasatch Range where enters from the east the irrigation canal that is responsible for this spectacular change in value, as well as the old trail of the emigrants, and its successor, the Central Pacific Railroad. This Weber River Canyon is the one possible entrance through the barren mountains.

Ogden offers a valuable extension of the ride from the south in the trip through Ogden Canyon to Ogden Valley, once a bay of Lake Bonneville, now a secluded mountain valley about forty miles square. At one point the canyon is so narrow that highway and electric car line have little room to spare, while the limestone walls tower several thousand feet high on either side. There

is an artificial waterfall at one point high up on one of the rocky walls of the canyon, fed by a stream from one of the sixteen artesian wells in the valley beyond the source of Ogden's water supply.

Long distance highways lead from Ogden to Yellowstone Park, to Pocatello, Idaho, to Twin Falls, Idaho, to Evanston, Wyoming, and to Reno, Nevada, and thence to San Francisco. The latter route, along the line of the Central Pacific, is the Lincoln Highway. This highway rounds the lake to the south, as did the railroad until the Lucin Cut-off was built directly across the lake, so saving forty-two miles of difficult travel, and eliminating 4300 degrees of curvature.

The lake thus boldly crossed was long a mystery. In 1689 Baron Lahontan, in telling the story of his discoveries in the southwest, spoke of the Mozeemlek Indians who described to him a lake of salt water thirty leagues wide with three hundred leagues of shore line. The Baron's map showing the lake is one of the curious documents of early days. Washington Irving, in the volume describing Captain Bonneville's journey across the Rocky Mountains, published a map that called the body of water Lake Bonneville. A map in Bradford's Comprehensive Atlas, published in 1835, spoke of it as Lake Timpanogas. John Bidwell, who went to California with the first emigrant train in 1841, wrote in *The Century* (November, 1890):

Our ignorance of the route was complete. We knew that California lay west, and that was the extent of our knowledge. Some of the maps consulted, supposed of course to be correct, showed a lake in the vicinity of where Salt Lake now is; it was represented

SANTA CLARA COUNTY

as a long lake, three or four hundred miles in extent, narrow and with two outlets, both running into the Pacific Ocean, either apparently larger than the Mississippi River. An intelligent man with whom I boarded . . . possessed a map that showed these rivers to be large, and he advised me to take tools along to make canoes, so that if we found the country so rough that we could not get along with our wagon we could descend one of these rivers to the Pacific. Even Fremont knew nothing about Salt Lake until 1843, when for the first time he explored it and mapped it correctly.

The rails of the Western Pacific Railroad, which lead directly west from Salt Lake City, along the southern shore of the lake, rest for many miles on a layer of salt from six to eight feet in thickness, until the road comes to the Toano Mountains, that were the western limit of the old Lake Bonneville. This was the route of the overland emigrant trails. The Central Pacific, after crossing the lake, is joined by the newer road, some distance on in Nevada.

Nevada takes its name from the Sierra Nevada Mountains; the name means snowy. The salt incrustations on the desert as well as the snow on some of the peaks that rise from ten to eleven thousand feet make the name peculiarly appropriate. The railroads wind in and out of less imposing peaks of from four thousand to six thousand feet, so that the traveler is apt to forget that in the sixty-five groups or chains of mountains in the state there are peaks as high as thirteen thousand feet.

Even amid the salt, the sand and the mountains, there are bits of agricultural land. Near Wells there are great herds of cattle and sheep, while near Winne-

LOOKING DOWN OGDEN CANYON

PALISADE CANYON, NEVADA

CHANNEL OF HUMBOLDT RIVER, NEAR RYE PATCH, NEVADA. EXCAVATED IN DEPOSITS OF FORMER LAKE LAHONTAN

mucca, along the Humboldt River, are comparatively fertile districts. Tributary to the Truckee-Carson Reclamation Project, near the western border, there is pleasing evidence of agricultural prosperity. These fertile lands are visible from the Central Pacific and from the Lincoln Highway.

Wells was a longed-for spot in the days of the emigrants. In a meadow not far from the railroad are scores of springs, varying in size from a few inches to three or four rods across. These flow most freely in the autumn months, but at all times there is ample water.

In these springs one of the branches of the curious Humboldt River has its source, but the main source is far to the northeast. This oddity among rivers begins, has its entire course of about one thousand miles, and ends within one state, and is the longest river in the country of which this is true. Fifteen thousand square miles are drained by the river and its tributaries. It is a high altitude river; its source is seven thousand feet high, and it loses itself in Humboldt Lake, near the western border of the state, at forty-one hundred feet above the sea. Further, it furnishes the only possible passage from the east to the west through the Humboldt Mountains; this explains the neighborliness of the two railroads for one hundred and fifty miles from Wells to Winnemucca. At this point they separate, because they are bound for different passes across the Sierra Nevada Mountains.

There are further strange facts about the Humboldt River. Its average width is but forty feet, and its average depth less than two feet. Humboldt Lake,

into which it empties, has no outlet, except in the season of melting snow, when the waters overflow into Carson Sink.

The stream was unknown to white men until 1828, when it was seen by some fur hunters. The name was given to it by General Fremont in 1844.

For many miles the sluggish waters of the Humboldt have cut a channel through the débris left by Lake Lahontan, the prehistoric body of fresh water that stretched for 250 miles from north to south and for 180 miles from east to west. An enormous mountainous island was enclosed by the water. Close observation of some of the mountain sides visible from the railroad show beach lines of the old lake that was about four hundred feet deep in the Carson district and some nine hundred feet deep at Pyramid Lake, whose waters are close to the California boundary, and between the diverging tracks of the Central Pacific and the Western Pacific.

Pyramid Lake, thirty miles long, with its encircling rim of rugged, snow-capped mountains, its bird reservation, Anaho Island, where pelicans live undisturbed, and the Pyramid Rock, make the ride thither by a branch railroad a worth-while trip for any tourist.

From the south, into Pyramid Lake, flows Truckee River, whose course is brief though varied. At first it flows through the foothills, with thick forests about it, but it enters the Truckee Meadows at Reno, the old Lakes Crossing of the pioneers, who here heaved a sigh of relief when they left the desert waste behind them and saw the clear water and the green slopes ahead.

The modern tourist by automobile who approaches California by the Salt Lake City Route has offered to

him an embarrassment of riches when he approaches the California line. He can keep on through Truckee, rushing on toward Sacramento by the route paralleling the Southern Pacific Railroad—then he will have the disadvantage of passing by Lake Tahoe unless he makes a side trip, and will have the advantage of the railway passenger who must ride through weary miles of snow-sheds on both sides of the summit; he can go south from Reno to Carson City and on by the King's Canyon Grade to Glenbrook, on the Nevada shore of Lake Tahoe, of which Isabella Bird said, "I have found a dream of beauty at which one might look all one's life and sigh." Then it is well worth while to take the steamer for the seventy-two-mile trip around the shore line of the lake, passing over the spot where soundings have been made to a depth of two thousand feet, and no bottom found, defining the limits of Emerald Bay, that priceless gem hidden away near the southeast section of the lake, looking up now at the lofty Mt. Tallac and again at Pyramid Mountain, or at others of the prodigal array of peaks that surround the lake .

At Glenbrook the car may be taken once more and the Nevada shore skirted to the south end of the lake. Then a short detour leads half-way around the three-mile-long Fallen Leaf Lake—a lake whose charm is so great that the region would be famous even without Lake Tahoe.

And there are scores of other lakes near by. Echo Lake can be reached by a short detour from the Lincoln Highway. Soon the Supervisor of the El Dorado Forest hopes to have a practicable automobile road circling among some of the lakes, to the shore of Tahoe and back again. A lover of the trail on learning of his plan

said he hoped it would not be carried out; it would spoil a trail trip to Desolation Valley and the lakes there and beyond that now wait in primitive splendor the approach of those who take what this enthusiast asserts is the one sensible means of mountain travel.

There is an easy climb of fourteen hundred feet from the meadows south of Lake Tahoe to Summit Pass, 7630 feet. A clamber over the rocks at the roadside, and a lookout station, erected by the Forest Service for the convenience of travelers, is reached. It will be found a difficult task to turn away from the prospect from this eminence—the lakes stretching away toward Truckee, the mountains of California and Nevada, the meadows, where cattle graze and pine trees lift their heads. How the pioneers who toiled this way must have rejoiced at the sight! A judiciously placed signboard directs the thoughts to their privations:

Emigrant Trail Marker Number 3. Abandoned for a smoother and lower grade and long since forgotten. Just below may be seen the road over which the travel-worn emigrant gained the summit of the Sierra Nevada. A view of the ancient path is worth while. Picture in your mind the straining ox team, drawing heavy-laden wagons over steep and rocky ways. Compare the comfortable modes of travel of to-day with those of yesterday.

For many years after the emigrant ceased to pass this way in large numbers this was the teaming road between Carson City and Sacramento. During the silver excitement of the late sixties and early seventies freighters were always in evidence. "I remember well how thick they were," a reminiscent driver said. "All day long there was a continuous stream of wagons. If,

ON LAKE TAHOE, NEVADA-CALIFORNIA

for any reason, one of the outfits fell out of line the driver might have to wait by the roadside for hours before he could find place in the procession once more. Stages had to travel by night to make the distance."

By easy grades this southern road to Sacramento passes through pine forests, along the gorge of the South Fork of the American River, past Lover's Leap, a great rock seven thousand feet high, where glaciation marks are plain, on to Placerville, the pioneer mining town, long known as Hangtown, where the business street, although lined with modern buildings, still has the picturesque appearance of days gone by, while the residence streets on the hillsides follow the planless, helter-skelter paths used by the miners in their trips to the valley. Above the town is old Sacramento Hill, with its tremendous cutting, from which millions of dollars in gold were taken. Eight miles to one side old Coloma keeps watch over the spot on the American where Edward Marshall found the first gold in Sutter's mill race—a discovery of which his companion, Azariah Smith, wrote in his diary:

Sept. 9, 1847. Last Wednesday I took a job at Sutter to dig a race at 12½ cents a cubic yard. We expect to make more than $10 a day.

Sunday, Jan. 30, 1848. This week Mr. Marshall found specimens of (as we suppose) gold, and he has gone to the fort for the purpose of finding out what it is. It is found in the race in small pieces; some weigh as much as a five-dollar piece. . . .

Sunday, Feb. 6th. Marshall has returned with the fact that the metal is gold.

And this was the matter-of-fact record of an event that led John Bidwell, pioneer of 1841, to say:

It is a question whether the United States could have stood the shock of the great rebellion of 1861 had the California gold discovery not been made. . . . The hand of Providence so plainly seen in the discovery of gold is no less manifest in the time chosen for its accomplishment.

On a height overlooking the valley a grateful state has built a heroic statue to the discoverer. His outstretched hand points to the scene of his adventure, and his back is turned to the lands which El Dorado County is fast developing into orchards and farms, making ready for the day when she will be a leader in wealth more enduring than gold.

When, a few months after Marshall's find in the mill-race, the harbor of San Francisco was crowded with sailing vessels that had brought gold-mad treasure-seekers around the Horn, many of them ascended the river to Sacramento, not far from Coloma; these vessels had no difficulty in pushing through, though they drew as much as fourteen feet of water. To-day, however, shallow draft stern-wheel steamers, specially constructed for the Sacramento River, do not find it easy to reach the capital city of the state. Hydraulic mining, which filled the bed of the stream after washing down the hills along the tributaries, is responsible.

Sacramento, too, has seen marvelous changes. Those who pass along its beautiful streets find it difficult to realize that as late as 1861 the exceedingly dusty highways, with sidewalks of varying level, were bordered by a rather uninviting array of one- and two-story buildings. Even then, however, the bustling city of 13,000 people quickly wove its spell over those who came to live there, by reason of its brilliant but soft autumnal

sunshine, its equable climate, its wealth of shade trees and perfume-bearing flowers, its hospitable and unpretentious people and its easy-going ways.

Late that autumn the city by the Sacramento, which had already suffered from an epidemic of fires, entered on a new series of misfortunes. Once rains began, they were frequent and copious, with snow soon visible on the peaks of the Sierra Nevadas, some fifty miles or so to the east. Presently came a thaw. On December 9 the swollen American River—normally emptying at right angles into the Sacramento at the north edge of the city—broke through its dilapidated levees at a point some two miles east, and put the city under water so that only boats could use the streets. There was at once a great exodus. A succession of floods followed. The Sacramento valley was for months one vast lake. By June, 1862, the population of the city had dwindled to about 7000, and this reduced body of not rich people, with deflated business, had at once to tax itself half a million dollars extra for new levees, specially along the American River, where the piles of dirt came very handy in 1863 for Governor Leland Stanford and his associates, Huntingdon, Hopkins and Goelet, serving them as a roadbed for the first section of the Central Pacific Railroad which they were then starting to build at much cost of hardship and a chorus of jeers and predictions of failure from the pessimistic masses of the disheartened people.

"Stout-hearted little Sacramento!" wrote an admirer in 1870, "that was not dismayed by the wasting fires and the flood, that was not turned back from her large enterprise by the hootings and jeers of small souls."

CHAPTER XXI

FROM SAN DIEGO TO THE IMPERIAL VALLEY

CALIFORNIA is the home of superb highways. From one end of the State to the other, and from the Pacific to the Sierras, marvels of the road builder's art lead through scenes of persistent and ever-varied appeal. Frequently a visitor is heard to say, with a sigh, at the close of a day of delightful progress through some fascinating succession of California kaleidoscopic landscape pictures, "To-morrow can hold nothing better than this." Yet, at the close of the next day he is apt to own that California's motto, in scenery as in so many other things, is "Better yet to come." And this is true whether the visitor starts his journeyings in the north, about Mt. Shasta, on the west, at San Francisco, on the east, at Lake Tahoe, or in the far south, at San Diego.

But wherever the beginning is made, San Diego must be seen before the state is left behind—San Diego, of the romantic antecedents; San Diego, the Determined; San Diego, the Conqueror of Obstacles. In spite of all the visitor has read of the attractions of the city set like a gem on the slope that looks down on its beautiful land-locked harbor,—to the left Coronado Beach and its great hotel; in front Point Loma, with its ten-mile drive on the height between the Pacific and the bay—he is not disappointed. For San Diego is like a bit of fairyland —by night, when the lights are seen either from some commanding height, or from the dream-like central plaza; by day, when the call is to the streets that give

a view of the poetic setting of this city of Ramona, or to fourteen-hundred-acre Balboa Park. Until a few years ago this park was a barren waste, but now it is a bower of beauty, with its startling landscape effects, its bridge spanning the gorge that is a fitting approach to the low-lying palaces, reminder of the Exposition, and its rose garden, which, even in a region renowned for its flowers, is a riot of harmony and color and perfume.

But it is a mistake to think that when the city itself has been seen it is time to hasten on to Los Angeles and the north. For, while San Diego is absolutely worth while, San Diego's back-country is even more alluring than the city. Some visitors go away with the fond notion that they have seen this back-country when they have made their pilgrimage south to Tia Juana, over the Mexican border in Lower California, or have taken an hour's ride on the boulevard-like roads to the west. And they have not made a beginning.

The real back-country of San Diego has been opened up by the building of the Imperial Highway and connecting roads, notably the road to the Lagunas, recently constructed with admirable skill under the auspices of the United States Forest Service, whose Cleveland National Forest is protecting the watersheds, securing ample water supply for hundreds of thousands of people as well as for the growers of fruits and grain, and providing recreation areas for all who live in the region from the Pacific to the Arizona line.

The road to the Lagunas winds in and out of the hills, along the valleys and across the ridges, past Mt. Helix, with cross on summit, where sunrise services are held on Easter morning, and within sight of the slope over-

looking the rich El Cajon valley. Then comes the Valley de las Viejas, with its abrupt hills on the left—a valley whose legend is told by an old Indian woman, for years helper in the kitchen at Hulburd Grove, the convenient half-way station for travelers to the Lagunas. In the days before the white man arrived, Indians lived happily in the valley. But one day came the tidings that the Spaniards were advancing from the coast, and the warning that wherever these men appeared the Indians were treated cruelly. So at a solemn council it was decided that all the strong men and women should hide in the mountain, leaving behind only the old women and the men who were past fighting. "What if they do kill us?" said those thus marked for sacrifice. "We are useless; let us die." Thus when the Spaniards came they found no one whom they could fight; so they called the place "the Valley of Old Women."

If the story is true, some of those who fled from the strange visitors must have taken the picturesque trail over the Deerhorn Mountains, by the Sweetwater Gorge, which is followed by the Imperial Highway. Then comes Descanso (Rest). Just beyond Descanso is Hulburd Grove amid the live oaks, on the banks of the Sweetwater.

From Hulburd Grove as a center the way is open either to the Laguna Mountains, a tract of natural forest about five or six miles wide by ten or twelve miles long, some sixty miles east of San Diego, at an elevation of from five thousand to six thousand feet, approached by a gradual and comparatively easy climb, or to the country of the Cuyamaca Mountains, farther north, a region not less beautiful but with striking differences.

While it is possible to make both trips in a single day, it is better to allow a longer time.

The vegetation along the road to the Lagunas is varied. At first there is an abundance of live oak trees with their gnarled trunks, spreading branches and deep shade, but gradually these give way to the mountain deciduous oaks and to the pine trees. Thousands of these stately pines bear the marks of old blazes; the Indians have a tradition that many years ago white men came to the forest, tapped the trees and carried away the turpentine, at the same time making the explanation that far away there was a great war, and that the side that had the most white sap would win. This tradition dates back to the days of the war between the North and the South, when the North's natural supply of turpentine was cut off.

Under the pines the ground is carpeted with the fragrant, slippery needles where campers delight to make their beds beneath the great trunks whose bark has been peppered by the industrious woodpecker in the search for insects, and into these holes the equally industrious and more provident squirrel snugly fits his acorns against the day of dire need when snow lies thick on the ground.

Now the slopes are covered with the bright colored bronco grass; again there are natural highland meadows where the cattle graze. And everywhere there are brilliant flowers—the gigantic white matillaha poppy, the scarlet bugler, the Indian paintbrush, whose tint seems to become deeper as the altitude increases, the white lilac, the Alpine phlox, the wallflower, and the purple penstamen. As the season advances the wild growth changes, but always there is striking variety.

With one of the sudden changes of view for which the road to the Lagunas is remarkable, Pine Valley appears, an upland floor of emerald in a frame of brush-covered mountains. At the entrance to the valley are deep gorges cut in the floor during two seasons of the past twenty years, seasons of great forest fires, and so an object lesson of the destructive power of flood waters that were not restrained by the protecting brush covering.

Along the rugged slopes above Pine Valley climbs the forest road, presenting vistas across the valley to the Cuyamacas, and back through mountain passes to the blue Pacific, sixty miles away. Then on through the forest where inviting camping grounds have been made available for the dwellers by the sea or for the denizens of the desert or the hot but fertile Imperial Valley; past the site of an old Indian village, where the rocks are full of pot holes, marks of the old campfires; then to the Ranger Station where record is kept of the campers who seek this favored spot and where permits are given for the building of campfires to those who faithfully promise to be more careful than a man of whom the Service tells with finger upraised in warning:

Tom Tourist always planned his fishing trips right carefully. When it came to having a good time, Tom was on the job. So he always got his National Forest maps, studied them carefully, and agreed fully with all the suggestions for care with fire in the mountains.

He was an old-timer at the game, and knew what a fire in the timber would mean. He also knew that Uncle Sam needed the help of every American in Uncle's big new job of helping half the world to get on its feet again after taking the Will out of Wilhelm.

So Tom Tourist, for the first 200 miles, was so care-

ful that it hurt. Then a Ranger saw him flip a lighted cigarette alongside the road. Now Tom didn't mean any real harm, and the talk he got stayed with him until he was ready for the run home.

"Let's go," said Tom, early one morning. He packed the trout carefully—but he left without putting his campfire out.

Five million feet of timber went up in smoke. Fred Farmer and his neighbors for ten miles around had to let their crops stand while they fought fire for two weeks. One thousand acres of God's country was ruined for years to come.

Tom's friends now go elsewhere. Tom goes to jail.

Not far from the station where vigilant Rangers have headquarters for the campaign of fire prevention and fire conquest, the road leads to the brink of a precipice where there opens with startling suddenness a view that compels silence in the manifest presence of the world's Creator. Far below and beyond is a vision that is like a prospect from an aeroplane—the arid desert, with its barren, broiling ridges; the Imperial Valley, rich and green and fruitful; the Salton Sea, mystery of the sand-swept basin beneath the level of the sea; and the mountains beyond, in Arizona, visible on a clear day. Where else is there a panorama to compare with this? Look at it through the setting nature has provided—on either hand ridges jutting from the height at the feet of the beholder, pine trees rising from the brink, their branches making silhouettes against the blue sky, all parts of a frame that sets off Desert View as a place apart.

A view still more extensive is that from the near-by summit of Monument Peak, 6321 feet high, or more than three hundred feet above Desert View. Here more

of the upper desert is visible. Far below and away to the east wends the old San Felipe trail, with the ruined stage station in the pass, leading to the Salton Sea, and later to the Imperial Valley. A backward look shows the waters of the Pacific, seventy miles away. Then a forward turn, with Arizona beyond. Three hundred miles of mountain and valley and desert, visible on a clear day from one summit—the entire width of golden, blooming, desert-defying California!

To the northwest Cuyamaca lifts its divided head—another of the summits that should be approached from the vicinity of Descanso. The road that leads to the mountain is bordered by live oaks, so that it seems more like an arbor than a mountain way. Up Green Valley it winds, through the old Spanish grant Cuyamaca, 32,000 acres in extent, past the abandoned Stonewall gold mine, where fortunes have been gained and lost, to the borders of Cuyamaca Lake, the source of the water supply of some of the smaller towns near the coast.

Here, where there is the smallest rainfall in all the region, Indian legends, in pleasing manner, give hint of the value the residents have always placed on water. They tell of a great ogre who once lived in Green Valley. He liked cold water, and he liked Indian maidens. No water he could find was cold enough for him, so he made a spring on Cuyamaca, which he called "Ah-ha! Wi-ah-ha!" (Water, Colder Water.) To this spring he sent his most beautiful Indian maiden captive, bidding her fetch water for him, and making threat of dire punishment if she should permit it to become brackish. But at the spring she prayed for release from bondage. The spirit of the spring engulfed her, and there she has

ON THE SAN DIEGO RIVER, CALIFORNIA

ON THE ROAD ABOVE CUYAMACA LAKE. THE ARCHED TREE IS A SUGAR PINE

dwelt in safety ever since, making the waters of the spring even cooler and more delicious.

Another legend tells of trouble that came when the spring Water, Colder Water, betrothed herself to Water Sweet, the stream that flowed down the sides of Pine Tree Peak into Green Valley. The betrothal brought to a head jealousy among the peaks. For the mountain Ah-ha Kwe-ah-mac (Cuyamaca) felt superior to Pine Tree because he, together with another mountain, wore beautiful long hair of sweet-smelling pines and cedar trees, while the head of Pine Tree was covered with lilac, elm, and much scrub and brush—short hair that was a sign of servitude. So when Pine Tree said that he had always sheltered Water Sweet and that Cuyamaca's Water, Colder Water, should not be betrothed to her, jealousy led to blows. There was an awful upheaval. Finally Pine Tree, conquered, was compelled to take refuge in the midst of mountains with short-cropped hair, far from Green Valley, where dwelt Cuyamaca and his sister peaks.

And for proof the Indians point triumphantly to the fact that Pine Tree (Corta Madera) now dwells apart, and to the further fact that while Cuyamaca has majestic covering of pine and cedar, Corta Madera hangs his head because there is nothing but brush to clothe his nakedness.

CHAPTER XXII

IN AND ABOUT LOS ANGELES

THOSE who are jealous of Los Angeles call her boastful and self-sufficient, but those who know best the City of the Angels say that back of every boast is a substantial fact, and that her record of achievements has given her some right to seem self-sufficient. Perhaps it would be fairer to call the city proud of things accomplished rather than boastful, and resourceful rather than self-sufficient.

Not long ago a dinner was given by public-spirited citizens of Los Angeles to which all were invited who had been residents of the city since 1890! That late date seems absurd, until the appearance of the city only a generation ago is recalled. That was indeed a day of ambitious beginnings, of ardent hopes, of wild prophecies. But who in that day had faith to picture the Los Angeles of to-day, sitting serenely many miles from the water, yet reaching out tentacles to the Pacific until she has become a seaport; taking tribute from hosts of tourists, and giving more than value received to all her visitors; rebuilding a second and a third and even a fourth time her business center until structures that seemed grand in 1890 to-day—wherever they survive—seem almost grotesque; cutting down hills that hindered her growth; developing vast areas of comfortable homes embowered in bloom; compelling the far-away mountains to send to her, across the desert and the valleys, an inexhaustible supply of water! Yet that is Los Angeles—only let it be remembered that there must

be added brilliant sunshine as well as (though usually in a strictly limited and homœopathic manner) an exceedingly wet rainfall; pleasure spaces even in the heart of the city, though the grounds of mansion and bungalow alike seem to be trying to make parks unnecessary; houses where there are real homes, and folks who are homelike and hospitable; churches that can give pointers to the East in many things, even if many of the people seem to prefer pride in church buildings to attendance on the services; school equipment that sets the pace for numerous other communities—as well as scores of other things that are named unblushingly by the Chamber of Commerce. And why not?

One boast most emphatically made is of the fifteen-mile-long recreation area along the coast from Redondo on the south to Santa Monica on the north, including far-famed Venice, whose buildings are supposed to lend a Mediterranean atmosphere to the scene, while lagoons and gondolas are planned for the pleasure of those who wish they could go to the smiling city by the Adriatic, or who desire to satisfy the craving for the Venetian atmosphere in which they revelled once upon a time. It is to be feared, however, that to those who know the real Venice the California borrower of the name is a hollow mockery, though it has enough charm of its own to make entirely unnecessary its claim to likeness to the only original city with its feet in the water.

Between Los Angeles and the lower seaside resorts is an area usually passed over hurriedly by the visitor, perhaps because his attention has not been called to it as among the chief attractions of the city. This slighted, yet most interesting section, is a portion of the vast market-gardening acreage surrounding the city, or

within the limits. There the Chinese toil with painstaking perseverance, and the Japanese make their leased ground produce an abundant harvest, while the Mexicans—almost always lacking in initiative, purpose or patience—sometimes are found at work for their fellows from the Orient.

There are those who say that they would not like to eat food prepared, or even grown, by a Chinese or Japanese laborer. But if their objection is due to the notion that these men are not cleanly in their habits, it would be worth while to spend a few hours in the shacks or in the fields of these market gardeners.

For instance, one might eat dinner with the Chinamen who have just come from the field. It will be a meal far different from that served in a Chinese restaurant, where tourists who partake of tea and confections fondly fancy that they are sampling Chinese cooking. After watching the laborers wash their hands with care, follow them to the table. It is covered with an oilcloth, but the oilcloth is clean. The floor is of dirt, but there is no litter about. The food has been cooked in great kettles over a most primitive stove, but neither kettle nor stove looks forbidding.

The main dish on the table is, of course, rice. And such rice! How do they manage to cook a great kettleful, ten times as much as would be used by an ordinary family, and in a comparatively short time, so that every grain stands out by itself, without one particle of moisture visible? Each man in turn fills his individual bowl, one first, however, making the privilege of serving the guest. For the eight men at table there are two sets of four small subordinate dishes—delicious greens of a peculiar kind which the gardeners do not sell, but re-

ELYSIAN PARK, NEAR THE HEART OF LOS ANGELES

IN THE SAN GABRIEL VALLEY, NEAR RIVERSIDE, CALIFORNIA. AN ORANGE GROVE IN SIGHT OF THE SNOW

LOOKING NORTH FROM PASADENA, CALIFORNIA

serve for their own use; peas and shredded pork; bits of dried fish; and what they call Chinese potato. From these dishes each takes a tidbit as he happens to want it, laying it in his bowl of rice, then taking it to his mouth with his chopsticks. The rice is eaten, not by lifting the grains by the chopsticks, but by holding the bowl to the mouth and, with the chopsticks, shoving their staff of life in a manner that to the observer seems the only natural method. From time to time the men turn to the guest and ask him if he will have more of the rice or the other dishes. When they are satisfied, the cook quickly clears the table, throws everything left over to the chickens, cleans the dishes in eminently orthodox fashion, and turns aside to share with his fellows the delights of the water pipe—though it is difficult to see what delight there can be in taking a smoke when each minute bit of tobacco, just enough for a single whiff, must be lighted repeatedly.

"Me glad! You come tomollow!" was the parting message of the master workman, who bowed low as the visitor passed on to the near-by home of a Japanese gardener who had outside his kitchen door a lean-to that looked like a smokehouse. There was a place for a fire under a stone hearth beneath the building's foundation, and the boards above it were charred by the smoke of months. The smiling Japanese wife opened the door, and disclosed nothing but a galvanized iron receptacle perhaps six times the size of a washtub. Then she explained that when her husband came home from the field in the evening it is his habit to light the fire under the absurd-looking tub, step into the vessel, turn on the hydrant, and wait there in luxury while the water slowly heated. Then he would remain an

unbelievably long time while the water became blissfully hot. At last he would be ready for the sleep that would fit him for another day of toil.

From the market-gardening section the way is easy to the beaches and then back toward the city, with the Santa Monica Mountains on the north, past numerous moving picture establishments, each with its silhouettes of buildings—mining camps, oriental villages, and the like. Though the rule of "no admittance except on business" is rigidly enforced, it is possible to see the arrival and departure of would-be vampires, as well as of many hopeful young girls with hair dressed to imitate popular stars.

Across the upper end of the city, at Hollywood, one of the cinema concerns has the advantage of the foothills at the back of the studio, and here innumerable rescues and searches for the lost in the wilderness have been staged. It is remarkable to see how limited a space is required for some of the long-continued chases of fleeing bandits or runaway lovers!

The boulevard that leads towards San Fernando has probably been chosen for the scene of numerous film dramas; its double roadway, with roses thickly placed on both sides of each section, provides a setting on which more than one searcher for locations has fixed his eyes.

Beyond lies San Fernando, one of the most picturesque of the old missions built along El Camino Real. What an eye to grandeur of setting those Spanish mission builders had! San Fernando is in an amphitheatre, whose bounds are fixed by the Santa Monica Mountains, the Simi Hills, the Santa Susana Mountains, and the Verdugo Hills—slopes now green, now brown, but always protecting to the mission in the fertile valley.

Fortunately for the pleasure of the visitor of to-day, practically nothing has yet been done to restore the crumbling walls of one of the two main buildings, though a modern chapel has been placed in the buildings by the roadside whose cloisters, still intact, are beautiful in their simplicity. The chapel is just above the great wine cellar, massive to-day as it was more than a century ago. Most of the old missions have been restored, and it is to be hoped that San Fernando will be cared for before it is too late. But let the work be done with sympathetic insight and with thoroughgoing restraint.

Between San Fernando and Pasadena there is a bit of desert land where the cactus thrives and where machine owners from the city like to stop and hack down gigantic stalks of yucca, returning home with the upright floral banner marking the car a square away in the city streets.

Then comes Arroyo Seco, crossed, at Pasadena the Marvelous, by the graceful double concrete viaduct; and, ten miles back in the San Gabriel Mountains, bordered by several hundred summer home sites leased by the Government for fifteen dollars each per year, as well as by vacation areas and playgrounds set apart as a bit of the service rendered by the Angeles Forest to the city dwellers who turn to these mountains for an outing.

And what chances these mountains afford for recreation! Roads and trails, camp and canyon, peaks and valleys, are on all sides; at every turn there are alluring nooks that offer help to men and women to put in a health-giving vacation. And the one request made of those who seek this area is that they will do their part to prevent the fires which would destroy the brush that covers the mountainside and so would hinder the con-

servation of water for the fruits and grain of the valleys. Residents of the valleys are so eager to coöperate with the Forest Service that counties, towns, and even individuals, volunteer to add to the funds available for furnishing fire patrols and fire fighters.

There is no better way to see the rich country tributary to Los Angeles, where the growers coöperate with workers of the Angeles Forest and of the Cleveland Forest, than to go by stage to Santa Ana, along avenues of pepper trees, by groves of oranges and lemons, of olives and English walnuts.

The Cleveland Forest lies to the east of Santa Ana, in the Santa Ana Mountains, and its lower edge is pierced by the Santiago Canyon road, among the live oaks and sycamores. These trees are at their best at the Orange County Park of 160 acres, a free resort for campers, where tourists stop in numbers when on the way from San Diego to the north.

For ten miles more the canyon leads on, with surprise at every turn. Numerous side canyons give their invitation to explore the secret places found by cattle rustlers of the early days. Up one of these side canyons is the garden and the redwood Forest of Arden, home of Madame Modjeska, where she lived with her husband during weeks of respite from the clamors of the crowd. The house is now a popular resort, and so may be seen easily; it is much the same as in the days of its builder, even to the red window in the Madame's bedroom, through which—so the story runs—the great tragedienne delighted to rest herself by looking at the woods which seemed to be on fire; though unfortunately for tradition, her son says that he secured that window for purposes of photography.

MR. BABCOCK ON DESERT MOUNTAIN, NEAR BAKER, CALIFORNIA

CENTRAL PARK, SAN FRANCISCO, CALIFORNIA

A few miles north of Santa Ana, near Placentia, is a more curious combination than a red glass window and a tragedienne—citrus groves and flourishing oil fields. In one large field producing wells are in the midst of trees that bear their luscious fruit.

From Placentia the way is easy to Corona and then, by the justly famous Magnolia Drive, to Riverside, where Mount Rubidoux, dedicated to Easter morning services, divides attention with the groves of the navel orange.

Redlands and San Bernardino are close to Riverside, and just beyond San Bernardino are the desert lands. But to the west is the Cucamonga Valley, whose proud slope to the San Gabriels adds to its beauty. This is the beginning of the fifty-mile backward stretch toward Los Angeles which completes the circuit of the famous fruit belt tributary to the City of the Angels.

CHAPTER XXIII

IN THE HEART OF THE SIERRAS

"LAY a velvet carpet across the Sierras! The Emperor is coming!"

The dismayed mountain guide read the message from a friend in San Francisco who would warn him what to expect when the magnate who traveled in his private car reached the mountains. And he sighed.

"But I am afraid I would have done more than sigh if I had been able to forecast the three tragic weeks that followed," he said. "Think of a man who declared that he would not stir a step into the mountains unless his hair mattress, double thickness, was carried along! I ought to have put my foot down hard, but in a moment of weakness I had the mattress draped over a burro's back. Poor beastie! He couldn't even flirt his tail; he was a ludicrous sight as he passed along the steep trail, only his long ears showing above the mattress.

"And the wife! She wore silk stockings and high-heeled shoes when she mounted her horse the first day of the trip. And she said to one of the guides, 'You stay by me, my man, for I may want to get off at any moment.' And he replied, with a firmness I envied him, 'I'm going to Horse Corral Meadows, ma'am, and if you want to go, too, you just stick on that horse.' "

Once her poor guide, unable longer to stand the strain, sat down on a rock and wept. "The spectacle of a hard-boiled egg of a mountaineer crying like a baby was too much for the rest of us," the leader of the party said. "We did our best to comfort him, and in a little while he consented to make another attempt to conduct

the awful vacation-seekers over the torturing trail."

When the tale of the three tragic weeks was concluded, the guide talked of men who had entered the Sierras with other ideas than to have a camping trip *de luxe*. "John Muir and Joseph Le Conte—they were real men!" he declared. "No nonsense about them! How Professor Le Conte loved the Sierras! And how wonderfully John Muir talked of the meadows and the peaks, the canyons and the waterfalls! His every reference to the trees was a caress. It was great to camp with him!"

That guide himself must have caught the spirit of these men of the Sierras, to judge from his tale of a camping trip when he spent weeks alone.

"Yet I was not alone," he said. "I had some good companions on that trip. The most remarkable were six Clark crows which stayed with me for days. I was late that year; it was long past the middle of November before I finally heeded the signs of coming winter. Those six crows seemed to realize that I was going soon; they looked at me mournfully, they talked to me persistently, they robbed me unmercifully. Always they greeted me in the morning from a dead branch near my camp-fire, and in the evening they were at hand with their strident welcome. I'll never forget the day I left them. When I broke camp they remonstrated, and when I started with my pack horse down the trail they followed me reproachfully. The last thing I saw as I passed around a rock near by was that dead branch with the six Clark crows, perched side by side, looking after me so seriously, as if they would say, 'We didn't think you would leave old friends like this!' "

Fresno, in the San Joaquin Valley, is the favorite

gateway to the Sierras for this guide, though Merced and Visalia likewise are portals to the mountain fastnesses. But Fresno is a particularly good place for the start, since it has so many attractions of its own. Its raisin vineyards are famous, and its Kearney Park, with the twelve-mile approach, bordered by palms and pepper trees and magnolias, is a marvel. The park is the central feature of the great Kearney estate, where the bachelor man of mystery who owned it had a house containing many guest rooms, though he never entertained a guest. During his lifetime he did not show a particle of interest in educational institutions, but by his will the four thousand acres passed to the University of California as an Experimental Reserve Farm. Every year thousands of visitors pass through the gateway, their approach made easy not merely by the railroads, but by the remarkable State Highway from San Francisco to Los Angeles.

The day is not far distant when the roads that radiate from Fresno to different portions of the Sierras will be almost as perfect as the main north and south highway. In the meantime they are far better than the average, and the trip, whether made by stage or by private car, is remarkably easy.

Five or six hours away, to the southeast, is Sequoia National Park, whose two hundred and fifty-two square miles contain more than one million Sequoia trees, of which more than twelve thousand exceed ten feet in diameter. The monarch of all is the General Sherman Tree, said to be the oldest living thing, whose diameter is more than thirty-six feet.

From Fresno to the park the way is among vineyards and orange groves, to the shadowing foothills,

and then to the mountain heights—for the *Sequoia Gigantea* demands an altitude of from five to six thousand feet. It is not necessary to regret that these glorious trees cannot be climbed; a view of the surrounding country can be gained from Moro Rock and Sensation Point. From Moro Rock can be seen the structure of the Sierras, from the foothills to the highest summits. The United States Government has built a stairway to the top of this observatory of the mountains. From the bald summit of the glaciated rock there are spread out the Kaweahs, most spectacular of the Sierras. Far to the east numerous snowy peaks lift their heads, with majestic Mount Whitney, the king of them all, while to the north are more big groves of big trees, innumerable canyons, and peaks that make clarion call to those regions which most visitors pass by for the Yosemite, still farther north, though these are not less worthy of delighted attention than the world-renowned wonders of the upper Merced.

From Fresno once more is the chief approach to the Big Tree Country to the north of Sequoia Park. The road climbs rapidly as soon as the San Joaquin Valley is left behind. Fresno is only about one hundred feet above the sea, but General Grant Park, seventy miles distant, is about sixty-seven hundred feet high.

The passage through the foothills has its grim reminders of the days when Sontag and Evans, the mail robbers, the terror of Southern Pacific officials, eluded sheriff's posses innumerable. More picturesque are the tales of the Basque shepherds whose great flocks feed in the forests and along the canyons.

The final ascent to General Grant Park is by a precarious road along the edge of a deep canyon where pine

trees line the walls and brilliant flowers contest with the trees the claim to the attention of the passer-by.

In the park itself there are not so many specimens of the *Sequoia Gigantea* as in Sequoia Park, but the pleasing grouping of the great trees, and the presence here of the General Grant tree—which is practically as large as the General Sherman tree in Sequoia Park—make it a resort whose popularity is increasing each year.

The General Grant Park is a good starting point for the trip by pack horse to the great King's River Canyon, the first of the four great canyons of the mid-Sierras that present so many striking similarities. The canyons farther north are the San Joaquin, the Merced and the Tuolumne. To the two last named more attention has been paid than to the others, but King's Canyon and San Joaquin Canyon are in many respects as striking as the more northerly neighbors. The formations of King's River Canyon are remarkably like those of Yosemite, the canyon of the Merced, showing that the ways of erosion, glacial action and disintegration are similar along all the great water courses of these High Sierras. Those who persevere along King's River Canyon will come to the Kern River Canyon, the only one of the great gorges of the Sierra Nevada Mountains that stretches from north to south.

Fresno is the starting point for another of these canyons, that of the San Joaquin, and Huntington Lake, seventy miles away—the artificial lake seven thousand feet high which supplies Los Angeles with electric power—is the terminus of the road that leads almost due east. All but four miles of the distance may be made by the picturesquely crooked San Joaquin and Eastern Railroad, in whose first twenty-five miles from

KEARNEY AVENUE, FRESNO, CALIFORNIA

MORO ROCK, SEQUOIA NATIONAL PARK, CALIFORNIA

GENERAL GRANT TREE (*Sequoia Gigantea*)

NEAR HUNTINGDON LAKE, CALIFORNIA

Auberry there seems to be no stretch longer than three hundred yards without a curve. And such curves! To follow them in a comfortable railroad coach is an experience to be remembered, but far better is it to ride up the mountain stretch on a gasoline-driven speeder. The churning blue waters of the San Joaquin are from one thousand to fifteen hundred feet below, now lost in the pine trees, again coming into enticing view. At length the stream disappears in a box canyon, impassable for twenty miles. Far beyond the canyon shows Balloon Dome Summit, the snow-clad Minarets, thirteen thousand feet high, and Mount Lyell—peaks that mark the divide between the basin of the San Joaquin and that of the Merced.

The great power-station, from which wires lead to Los Angeles, is at the head of Big Creek Canyon, where Pitman Falls tumbles from shelf to shelf a thousand feet down the mountain. Four miles farther up—and two thousand feet higher—comfortable Huntington Lakes Lodge invites the fisherman, the boatman and the lover of the trail.

From the canyon where engineers have created the reservoir that looks like a natural mountain lake, the Indians used to make their way every year to Mono Pass, in quest of pine nuts. Still some of them go that way, though most of those who drive their pack horses over the Mono Trail are mountaineers by profession or are responding to the lure of the High Sierras. The trail has long been a standard means of access to the John Muir Trail, whose builders are making rapid progress—considering the shortness of the summer season—toward the completion of this tribute to the great mountain lover whose name it bears. "When the final work is done, perhaps six or seven years from

now, it will be possible for a man to pack his way from end to end and in twenty-eight days," said a guide familiar with the mountains. Then he said that the first time he took that trail he was on the way five months and a half!

It is not necessary to return to the valley before passing from the Huntington Lake region to the two remaining canyons of John Muir's favorite stamping-ground—Yosemite and the Hetch Hetchy. Not many miles below the exit of the San Joaquin from its inaccessible box canyon, there is a road that crosses the river on its way to North Fork, the headquarters of the Sierra National Forest, which includes most of the country to the crest of the Sierras. Above North Fork, and beyond the hill country where bandits many times held up the stage that, in more primitive days, carried pilgrims bound for the Yosemite, lies the Mariposa Grove of Big Trees, perhaps the best known of all the Sequoia groves, by reason of its nearness to the Yosemite valley. There are many who declare that these are the finest as well as the best known of the trees, though there is difference of opinion on this point among those who know and love the Sierras. Yet there can be no difference of opinion as to the overwhelming charm of the prospect from Wawona Point, the height above the grove. On one side, across the valley, are the lower slopes of the mountains. To the right rises the tree-clad ridge of granite beyond which is the Yosemite. And in the rear the eyes are gladdened by the sight of the upper side of the great mountains seen from the railroad below Cascada, above the box canyon of the San Joaquin.

Down from Wawona Point into the valley leads the road to Yosemite. Then up again from the valley to a

ON THE WAY TO HUNTINGDON LAKE

FOREST FIRE OF 1918 FROM WAWONA POINT

BRIDAL VEIL MEADOW, YOSEMITE NATIONAL PARK

MIRROR LAKE, YOSEMITE NATIONAL PARK, IN TENAYA CANYON

height of more than five thousand feet. Suddenly there bursts on the eyes a vision which cannot be described with any hope of telling its glory—the vision from Inspiration Point, where the Indians, who long reveled in the delights of the Yosemite, stood and worshiped; where the settlers from the San Joaquin valley, in pursuit of Indian raiders, paused in silent wonder. And those who follow in the steps of those first white visitors to the valley must imitate their silence as they pause at the gateway of what Emerson called "the only spot that I have ever found that came up to the brag." Involuntarily voices are hushed, and the best in the beholder comes close to the surface. "You simply can't lie or say things in a place like that," was a mountaineer's way of expressing his feelings.

At first the eye refuses to distinguish the features of the valley spread out like dreamland far beneath him. But as the moments pass he recognizes El Capitan, the gigantic wall of granite of which the Indians told one of their marvel tales—the sudden rising of the cliff from the side of the Merced, bearing aloft two sleeping Indian boys who, when men and animals alike failed in attempts at rescue, were finally brought to earth by the insignificant measuring worm, humping himself up the precipice to the accompaniment of jeers and jibes, and bumping himself down once more, amid the tumultuous acclaim of all.

On the right, across the valley, the waters of Bridal Veil Falls slip down by the side of Cathedral Rocks. Beneath are the pines and the meadows. Beyond the valley's recesses urge speedy descent from the heights, along by the meadows in the great amphitheatre where Yosemite Village sits, with leaping, laughing, wind-driven Yosemite Falls on one side and the cliffs that

lead to Glacier Point on the other. All along the way the waters of the Merced plunge along their narrow bed, fed by the streams from the heights that come down in Vernal Falls and Nevada Falls and the other cascades to which, fortunately, it is possible to approach until the spray becomes like a welcome shower-bath.

Then comes the division in the canyon. From the right, the river descends rapidly along the Little Yosemite Canyon; to the left is the Tenaya Canyon, in its bosom Mirror Lake, whose waters are a poem in reflection. On three sides are the towering precipices. When the rising sun has not yet shown itself above the cliffs on the east, every detail of rock and tree and shrub is shown clearly in the depths of the lake, until it is difficult to tell which is the more glorious, the view above, or the view beneath. The details are sharp, distinct. The rocky islands with their growth of green, and the tree-lined shores cast shadows of lighter green that contrast delightfully with the darker green of the shadows of the pines. To the left Mt. Watkins' sloping sides are cut into the water like a cameo, while on the right another precipice gives a complementary reflection. And in the gap between a single great pine tree stands like a sentinel. Mirror Lake is a fit guardian of this side canyon that leads from the glacier-formed valley of the Yosemite.

It is good to be in these sun-kissed canyons for a few days, but how much better it is to be there for a week, a month, a season! In 1871 John Muir wrote: "I did not go for a Saturday or a Sunday, or a stingy week, but with unmeasured time, and independent of companion or scientific association." And that is the way to see Yosemite, or Hetch Hetchy, its wild and comparatively unknown counterpart in the north.

AVALON BAY, CATALINA ISLAND

CHAPTER XXIV

FROM LOS ANGELES TO SAN FRANCISCO

IT is possible to go from Los Angeles to San Francisco by two routes, whether the traveler uses the railroad or the automobile. The San Joaquin Valley route is fine, but the route along and near the Pacific Ocean is finer still.

As far as Santa Barbara the highway follows the route of the romantic old *El Camino Real,* the King's Highway or the Royal Road, first built as a means of communication between the Spanish missions founded by Junipero Serra, which were placed about twenty-five miles, or a day's journey, apart.

The road first reaches the coast at Ventura, the site of the San Buenaventura Mission, remarkable for its Moorish tower, its adobe walls six feet thick, and its great roof timbers that were brought from the mountains fifty miles away.

Directly south of Ventura the eye looks off to the Channel Islands, where Cabrillo, California's first visitor from Europe, landed in 1542. Before his death on San Miguel Island he anchored in the beautiful half-moon harbor of Avalon, Catalina Island, famous to-day for its sea-gardens and its glass-bottomed boats, as well as because it is the approach to California's isle of perpetual summer, where the climate is nearly perfect. Once gold-seekers sought to overrun the 55,000 acres of the island. Later United States troops occupied it, but now it is valuable only as a resort for the fisherman, the hunter and the pleasure-seeker.

It is impossible to forget the ride along Santa Barbara Channel, looking out toward the islands. On one side are the mountains; on the other are the rugged cliffs, which stop the impetuous rush of the Pacific waves, and make landing difficult.

If Santa Barbara is approached from the mountains the scene is equally impressive. The road across the Santa Inez Mountains is difficult, but difficulty is lost sight of when from the summit the foothills with the Mission two miles from the ocean, and the valley in which the city is built, compel the admiration of the beholder. The broad streets, the luxuriant trees, the welcoming parks and the beautiful homes of Santa Barbara plead with him to come down and abide there.

And the people of Santa Barbara know how to welcome the visitor. The romantic days of the Spaniards are not yet so far away that the traditions of easy-going hospitality have been forgotten. Charles Howard Shinn tells delightfully of the days when there was not a hotel in California, when it was considered a grievous offence even for a stranger, much more for a friend, to pass by a ranch without stopping. Fresh horses were always furnished, and in many cases on record when strangers appeared to need financial help a pile of uncounted silver was left in the sleeping apartment, and guests were given to understand that they were to take all they needed.

A forest lover, on tour with his family, found a survival of this pleasing hospitality when he attempted to camp on vacant ground not far from a ranch home. "Father wants to see you," a young man said to the campers while they were pitching their tent. Surprised, they sought the father, who greeted them with

ON THE RUGGED PACIFIC SHORE, NEAR SANTA BARBARA, CALIFORNIA

THE PINNACLES, SANTA CLARA COUNTY, CALIFORNIA

A BIT OF THE BEACH AT SANTA BARBARA, CALIFORNIA

shaking head and welcoming hand. "Why did you go past the ranch?" he asked. "We have beds, we have food, we have a place for your beasts. Come down to the house at once. We want you."

In 1829 a young American, traveling in company with Spaniards from Los Angeles, was given some fruit by the way. He offered two reals to the woman who gave it. In surprise she let the silver drop to the floor. Her husband fell on his knees and pleaded, "Give us no money, no money at all; everything is free in a gentleman's house."

Further reminder of this cordial spirit was given by the Supervisor of the Monterey National Forest when he sent out his annual official invitation to the vacation-seeker:

You have no doubt begun to make plans for your summer vacation. Have you ever considered the Monterey National Forest as the place for it?

This Forest, situated in the rugged part of the Coast Range, between Monterey and San Luis Obispo, offers attractions of both ocean and mountain.

There are three summer resorts within or near the Forest: Pfeiffer's ranch resort on the Coast Road near the mouth of Big Sur River, 35 miles south of Monterey by stage, Tassajara Hot Springs, the waters of which are famous for medicinal qualities, 50 miles by auto stage from Salinas, and the Arroyo Seco resort, 15 miles by road from Soledad. All of these places are in the midst of a country abounding in game and in trout streams, stocked by the Monterey County Supervisors and the Forest Service.

If, instead of automobiling, you prefer to leave the roads and travel through country accessible only by trail, you may find trails that have just been completed, opening up new areas for exploration. You can reach

camping places in the upper San Antonio and Nacimiento Creeks and the upper Arroyo Seco by way of King City if you come from the north, or by way of Bradley and Jolon if you come from the south.

You can reach the lower Arroyo Seco from Soledad or King City, and the upper Carmel River, the Big Sur River, and the other streams of the Monterey Coast from Salinas or Monterey. This country is famous for its hunting and fishing, its rugged scenery and its marine landscapes.

To reach these places you can start either with horse and pack or on foot, or travel by auto to the end of the road and there make arrangement to have some one pack for you. Several ranchers will do packing for campers. Detailed information will be gladly furnished upon request.

Monterey likewise speaks restfully of the old Spanish life. There is Mission San Carlos, where, according to legend, Junipero Serra was buried behind the altar rail. Relatives from Spain by bribery managed to secure the body and to carry it home with them, leaving behind the body of a criminal, wrapped in the vestments of the great Father of the Missions. There are the languorous streets of the old town and slumber-inviting houses by the way. And there is the famous Seventeen-mile drive to Cypress Point, among the sand dunes, along the rocky shores above the breaking waves, past the famous cypresses, in exposed places tortured by the wind into all sorts of fantastic shapes, and in more sheltered spots standing erect and normal.

As startling in their way as the twisted cypresses of Monterey are the Pinnacles of the San Benito River Valley, twelve miles from the highway at Soledad. Here six square miles have been set apart as a National Monument. Some of the rocks are comparatively small,

CORMORANT ROCKS NEAR MONTEREY, CALIFORNIA

NATURAL BRIDGE ON THE COAST AT SANTA CRUZ, CALIFORNIA

IN THE SANTA CLARA VALLEY, CALIFORNIA

while others are from six hundred to one thousand feet high. No one may climb them, but all may stand below among the great boulders and marvel at the record of the day ages ago when a new course was made for the San Benito River towards Monterey Bay.

Santa Cruz contests with Monterey and Soledad the claim to the possession of the most remarkable natural features in the country on and near the coast. Santa Cruz has rugged cliffs on the ocean shores and natural caves where the waters boil and foam in contests renewed twice daily, while near at hand is the grove of *Sequoia Sempervirens,* where great trees, the largest of these fifty feet in circumference, rise in majesty on a slope that reaches down to the bank of a stream that seems lost amid such grandeur. And to the northeast there is the great cleft in the mountains cut by the Los Gatos River, where the branch road twists and turns along the precipice in its descent toward the city.

Along the road from Monterey to San Francisco still other marvels arrest the eye, in the fertile Pajaro Valley, where immigrants from Dalmatia succeed in growing some of America's finest apples, and in the Santa Clara Valley, farther north, the home of the vineyard, the apricot and the prune. The latter valley is dominated by Santa Clara and San José, cities connected by the Alameda drive, shaded by trees planted by the Mission Fathers when Spanish rule was in its glory. Access to Mount Hamilton, with its great Lick Observatory, is gained by way of the Alum Rock drive and the connecting road, twenty-five miles to the summit. Leland Stanford University, with its quaint quadrangle of mission architecture, is within easy reach to the north of San José. Its generous campus joins eight thousand

acres of valley and hill, once the Stanford home vineyards but now a part of the school's endowment.

Stanford University is near the southern extremity of San Francisco Bay, called on a map of 1835 the Bay of Sir Francis Drake. A few miles northeast, at Berkeley, is the older University of California, which, unlike Stanford, had a long period of struggle before it reached its present proud position. In 1853, as the College of California, it began in Oakland with an attendance of three. Twenty years later, it was removed to the beautiful site at Berkeley, which Joseph Le Conte said was one of the most beautiful sites in the world. "Behind it the Berkeley hills, with their softly rounded forms, mantled with green, rise to a height of over two thousand feet within the distance of a mile," he wrote, in his pride of the institution to which he gave his best years; "in front the ground slopes gently to the noble San Francisco Bay, with its bold islands; and beyond the bay are the picturesque Santa Cruz and Tamalpais ranges, 3000 feet high, broken by the narrow strait called Golden Gate, through which, from the University, one can look out on the limitless Pacific."

What a time the prophets of those early days would have if they could look on the cities seated on San Francisco Bay! There were those who said that the removal to Berkeley would be fatal to the University. Others declared that Oakland would never be more than "the rural suburb and school-house of San Francisco," while they were ready to concede that San Francisco would be the great city it has become. One man declared in 1868 that the city by the Golden Gate would be not merely the metropolis of the western part of the

IN SAN FRANCISCO, LOOKING NORTH FROM THE CALL BUILDING, ALCATRAZ ISLAND IN CHANNEL, MARIN COUNTY HILLS IN THE DISTANCE

United States, as New York is the metropolis of the eastern part, but *the* city, the sole great city. As if this were not enough, the prophet concluded by a question: "Is it too much to say that this city must become the first city of the continent; and is it too much to say that the first city of the continent must ultimately be the first city of the world?"

The residents were surely right in speaking of San Francisco's matchless location as a great asset. But it required a man from the East—Samuel Bowles of the Springfield *Republican*—to give what is perhaps the best short description of the city ever written:

> San Francisco hangs over the edge of its (California's) chiefest bay, like the oriole balancing on the crest of its long pocket nest, peeping around the corner to the Pacific, but opening wide eyes north and south and east to the interior.

San Francisco commanded admiration in the days of gold, but how much greater must that admiration be to-day when the chapter of her triumphs is recorded —the conquest of hills that are almost precipices by a means of transit invented for the purpose; the turning of shifting sand dunes into sites for homes and beautiful Golden Gate Park; the tunneling of Lone Mountain, long thought to be an impassable barrier to broad Market Street; the reconstruction of the city after the cataclysm of 1906, the most notable example in history of a city rising from its ashes.

The city by the Golden Gate is rich in recreation spots. The ocean calls, and the voice of the mountains is heard. But perhaps the most appealing of the resorts is Muir Woods National Monument, near the base of

Mt. Tamalpais, the only grove of redwoods within easy reach of the city. Visitors to this wilderness of huge trees, of fern and flower and shrub, will have pleasure increased if they keep in mind the reply made by the donor, William Kent, of Chicago, to the proposal of Theodore Roosevelt that the gift be called Kent Monument:

Your kind suggestion of a change of name is not one that I can accept. So many millions of better people have died forgotten that to stencil one's own name on a benefaction seems to carry with it an implication of mundane immortality, as being something purchasable.

I have five good, husky boys that I am trying to bring up to a knowledge of democracy and to a realizing sense of the rights of the "other fellow," doctrines which you, sir, have taught with more vigor and effect than any man in my time. If these boys cannot keep the name of Kent alive, I am willing it should be forgotten.

CHAPTER XXV

IN THE MOUNT SHASTA COUNTRY

ON February 14, 1827, Peter Skene Ogden, Hudson Bay fur trader, found himself in the Shasta country. That evening he penned a delightfully discursive entry in his diary:

> Wind blew a gale. If the ship destined for the Columbia be on the coast this stormy weather I should feel anxious for her. Having 40 beaver to skin and dress, I did not raise camp. . . . I have named this river Sastise River. There is a mountain equal in height to Mt. Hood or Vancouver. I have named it Mt. Sastise. I have given these names for the tribe of Indians.

Sastise has become Shasta, but there has been no change in the admiration inspired by the mountain. Rising abruptly and alone, to a height of more than fourteen thousand feet, from a plain little more than three thousand feet above the sea, it impresses itself on the beholder as do few American peaks. And it is so close to the railroad that tens of thousands become acquainted with the startling sweep of its sides, the sharp line between the trees and the snow, and the bald summit, so often lost in the clouds that crown its head. Lassen Peak, seventy-five miles to the southeast, has won fame because it has had the temerity to become an active volcano. But Shasta, always the same, proudly asserts its lordship over plains and mountains in Northern California.

The best way to know Shasta is to climb to its summit, as many do each year. However, no one needs to be discouraged if strength or time for the climb are lacking. For the country about the mountains is accessible both by country roads and by the roads and trails of the Shasta Forest which wend their way amid grazing stock and browsing deer, through pineland and meadow and—alas!—through areas blackened by forest fires.

For the visitor who is ready to guard against fire, there is a pleasing entrance to the forest area not far from the Castle Crags, near the Southern Pacific Railway station of that name, by way of the Castle Crags and McCloud River toll-road. This road leads up Soda Creek Canyon, amid the swaying trunks of red firs, which somehow seem a bit more companionable than the great Sequoias. Perhaps a deer will leap from the roadside ahead, as on the day the author made the trip. A doe with her two spotted fawns turned startled eyes on the machine and its occupants. The doe and one fawn succeeded in escaping, but the other fawn lay down in the road directly before the wheels. The skillful driver avoided her and the animal was gently lifted into the underbrush and there left to be discovered by the anxious doe, which would probably lose no time in removing the hated man smell from her little one.

Not all animals in the Shasta area are as appealing and as harmless as the deer. Every year official hunters seek the mountain lions, which prey on the sheep and cattle that find pasture in the forests. One of these men, a year or two ago, succeeded in killing five lions in a single day. A curious Ranger who asked him to tell of his narrowest escape heard from him a startling story:

MOUNT SHASTA, CALIFORNIA

One winter morning when my wife had gone from home, taking the dog with her, I found the trail of two mountain lions. After pinning to the door a note asking her to send the dog after me as soon as she returned, I took my gun and started on the trail. There was no sign of the beasts until I slipped on the edge of a sloping ledge of rock. I arrived at the bottom safely, but found myself within a few rods of both lions. The trigger was pulled. There was no response. Again I tried to fire, but once more without result. The gun was empty! And I had no shells with me. At this ticklish moment, when one lion was about to spring, there was a rustle in the bushes that attracted the attention of the crouching beast. It was my dog, and about his neck was tied a handkerchief, in which were the missing shells. Later I learned that my wife had removed them for fear our little boy would get hold of the gun, had forgotten to tell me of her act, and had sent the shells to me by the dog as soon as she realized that I was out facing lions with an empty gun. It seems a miracle that I was able to load and fire before the crouching lion sprang, but the miracle was performed, and I live to tell the tale.

The cover for deer and other game becomes more dense as the toll-road gives place to the road to the Country Club on McCloud River, where some San Franciscans resort for fishing and hunting. The back is turned on mighty Shasta, with the clouds that play hide and seek with its summit, and for twenty miles the road leads far above Squaw Creek, on a narrow shelf, through a canyon of unparalleled beauty. The slender stems of adjacent pines sway in the wind, sometimes in unison, but more often in a manner that emphasizes the beauty of their stately movements. The deep green of the firs blends at length with the lighter green of the oaks and the butternuts. From far beneath comes the

sound of the rushing waters of the creek, and gradually, from beyond, comes the deeper boom of the glorious McCloud River, born of Shasta snows, bearer of life to countless fields, home of the trout that swim so tantalizingly close. The waters of the river are actually ten, fifteen, twenty feet deep, even when they seem most invitingly shallow. Many think of the McCloud as the most beautiful stream in California.

Squaw Creek Canyon affords one of the best opportunities, in a region readily accessible, to see a virgin forest in a great watershed that feeds the streams of a fertile land. Within easy reach are other canyons and slopes from which the forests have been removed by the lumberman or by fire. Some of these areas are being replanted with pines from the interesting Pilgrim Creek Nursery, a few miles away, within the shadow of Shasta. There hundreds of thousands of baby trees await the time of their transplanting to one of the bare areas. Ask the nurseryman what these trees will be like in ten years. "If all is well they will be as high as you are," he answers. "And fifty years hence?" With a smile he points to a tree perhaps thirty feet high. "We are working for future generations," he explained. The real forester must know how to be a dreamer as well as a practical man.

Perhaps twelve miles from the nursery, and a little closer to Shasta, there is an industry that destroys in a few moments the forest growth of years—the McCloud River Lumber Company, operating two of the greatest mills in California. It is a part of the work of the modern forester to show how such mills can be run with real benefit to the forests, and this company

operates, in part, on trees cut from government land, under skilled supervision.

There are few industrial sights so fascinating as those presented by a modern saw-mill like that at McCloud. The machinery seems almost human, and the men who tend it act with machine-like precision. Watch the endless chain that drags the logs from the pond into the mill; the steam-driven cross-cut saw that sends them on in proper lengths for cutting; the eager, sullen steel fingers that roll the log on the carriage or change its position that another side of it may be squared; the head sawyer, always on the alert, never at a loss, who gives his directions in dumb show to the men who tend the log on the carriage; the endless band-saw that cuts through the log as if it were cheese; the flying sawdust, now of pine, again of fragrant cedar, that makes one think of an old attic. Not a lost motion, not a lost moment, not a lost bit of product—even the sawdust feeds the fires below. Small logs, which would be called large in many parts of the country, are squared and cut to planks in from two to three minutes; a log five feet in diameter is reduced to lumber in seven minutes!

There cannot be many years before the great mill will be dismantled. But the forests will remain, and because the forests remain the McCloud River—with all the streams that come from Shasta—will flow serenely on toward the plains.

And high above rivers and forests cloud-enveloped, snow-clad Shasta will endure, mutely inviting to its shelter the pilgrims who look this way for vacation joy, smiling from its lofty height on those who seek respite from care in the vacation areas so abundantly provided in the great Shasta Forest.

CHAPTER XXVI

FROM CRATER TO CRATER IN OREGON

MOST travelers from the south approach Portland by way of the wonderfully fertile Willamette Valley, between the Coast Range and the Cascade Mountains, for the convenient railroad is there. Thus they miss the glorious scenery of Central Oregon, in the Cascades and east of the mountains.

While there is as yet no railroad route through this favored section, there is a system of practicable roads that make accessible nearly every portion of the district. Automobile stages go to many points to which railroads have not yet penetrated, and the cars of those who seek the famous camping or fishing grounds in the Deschutes National Forest may be met during the season in almost any road.

The nearly two million acres of the Deschutes Forest are penetrated by a network of one thousand miles of road, in addition to trails innumerable. These roads and trails lead to mountain peaks where snow and glaciers add beauty and tempt the climber; lakes where boating and fishing are provided in prodigal fashion; lava beds and craters which tell eloquently of upheavals in ages long gone; rivers that have their source in bubbling springs or melting snows; cascades that are so numerous it is difficult to catalogue them; ice caverns where the temperature is always below freezing; soda springs and hot springs and sulphur springs; mountain meadows where cattle graze by the thousand; and trees —white pine and yellow pine, spruce and fir and hemlock, lodge pole pine and other kindred forest growth.

The Cascade Mountains, which are the backbone of the Deschutes Forest, really begin in California. Restless Lassen Peak perhaps marks the southern limit of the system, while Mount Shasta dominates it on the south as does Mount Rainier on the north.

Mount Shasta is long in the view of those who pass northward on the search for the Oregon Cascades. Klamath Falls, from its commanding situation on Klamath Lake—the largest body of fresh water west of the Rocky Mountains—looks away to Shasta with profound appreciation of its utility; the twenty-five thousand Indians who live on the great Klamath Indian Reservation—every adult of them said to be worth, on the average, twenty-five thousand dollars—know of Shasta and delight in its beauty.

Reluctantly the traveler loses sight of Shasta, but soon—just before he comes to the bounds of the Deschutes Forest—he is under the shadow of the mighty peak that hides the wonder on whose account a national park has been created—Mount Mazama, in the dim past an active volcano until it lost its head and welcomed Crater Lake to its embrace. Once the mountain must have been lofty as other volcanic peaks of the Cascades—Mount Shasta, Mount Hood, Mount Rainier and a dozen more. But the cone blew off or fell in—how many thousand feet of it cannot be guessed—and the only reminders of the days of ages of fire long gone by are the great ridges that form the massive, lofty rim of the lake on the mountain top.

The approach is easy to this marvel of which the sadly overworked word "unique" can be used with propriety. Automobile roads climb to the lake both from the east and from the west, and these roads are usually open

by July 1 or a few days earlier. But when the author made his pilgrimage to what Joaquin Miller called "The Sea of Silence," great drifts of snow still blocked the way, and it was necessary to leave the machine and clamber for two miles over the barrier. This was fortunate; snow-climbing proved the best possible preparation for the vision that opened unexpectedly as the final drift was surmounted—a lake that glowed like a great jewel of amethyst one thousand feet below the precipice to which the road leads. The first white man who stood here, in 1853, insisted on calling it Deep Blue Lake, and the name persisted until 1869; then it was changed to Crater Lake.

But Crater Lake is blue, wonderfully blue, unbelievably blue. The varied color scheme of the pine-clad lava walls emphasizes by contrast the regal beauty of the waters in the depths which seem to speak the words of the Psalmist, "Be still, and know that I am God." Thus they spoke to the Indians; the Klamaths and the Modocs believed that their god Gaywas lived in the lake. And thus the waters speak to visitors to-day; a timberman who for the first time gazed in rapture on the lake and its surroundings took off his hat, lifted his hand to heaven, and said, reverently, "How can anyone who looks at that doubt that there is a God!"

The surface of the lake is broken by two rocky islets—Wizard Island, which the Indians declared was the head of an enemy of their god, who was thrown into the water. Then there is the smaller, Phantom Ship—so called because, to those who take the delightful trip over the lake in a motor boat, it seems to disappear and then reappear in a most puzzling manner. Of course the explanation of the mystery is the changing

KLAMATH VALLEY, OREGON; MOUNT STUCHEL IN BACKGROUND

CRATER LAKE [illegible] SHOWING WIZARD ISLAND AND GLACIER PEAK

lights and shadows far down beneath the encircling cliffs, some of them two thousand feet high.

For years the only way to circle the lake was on the surface of the water, but there is now a road around the entire rim—first used in 1919—from which the ever-changing beauties of this queen of mountain lakes can be studied at leisure. This road is to be a part of the great scenic highway that is to lead along the summits of the Cascades, all the way to Mount Hood. For a distance of two hundred miles this road in the clouds will be a mile or more high.

In silence the visitor leaves Crater Lake, but, if he takes the road along Sand Creek—which is born on Mount Mazama—he will soon find his voice, in amazement at the hundreds of lava chimneys that rise like church spires from the sides of the canyon where the creek has its bed. These hollow vents are fifty, one hundred, even one hundred and fifty feet high, and are in plain view from the road down the mountain.

The fascinating roads lead leisurely away through the forest—now up, now down, through aisles of great trees, and along torrents from the mountains; now crossing them over rustic bridges, again fording them in most attractive spots. After sixty miles of such roads Odell Lake appears, a highland bit of liquid beauty, where campers and fishermen delight to go, and where many of those who search for the beautiful say they find more real satisfaction than even at Crater Lake. "I can't tell you why I enjoy looking at Odell as I do," one visitor said. "To describe this lake is impossible. You are right here, looking at things as they were made, and you can no more tell about it in precise terms than you can tell why you love your best friend."

But even if it is impossible to describe Odell accurately, it is possible to have such an experience of its charms that these will never be forgotten. Take a good look at the lake from the hill on which the comfortable log cabin resort for the tourist is built. Cruise in a motor boat along twenty miles of varied shore line. Look up at the snow-clad peaks to the right and to the left—Crater Butte and Diamond Peak and Maiden Peak. Look down at their reflection in the clear water, where the trout can be seen many feet below the surface. Enter a bay with its beach sloping gently from the pines, or take the shore at a point where the water drops quickly away to the depths. Ramble through the primeval forest that clothes the shores, the ridges and the mountains as far as the eye can reach. Scramble along the banks of Trapper Creek, or Maiden Creek, from the mouth as far back as you choose to go. Climb the rock slide on Diamond Point, and look down at the blue lake three hundred feet below, and over to Diamond Peak, with its glacier-burdened slopes. Look, and say that life is good. Do this and other things like this—for a day, if you have only a day; for a week, if you can spend so long a time there. And see if you will not forget to grouch! You will go away a better man, easier to live with and a lot more comfortable to yourself.

In this enchanted land lakes by the score lie along the forest roads and trails. Some day every one of them will have a thousand visitors for one who goes there to-day; some day sumptuous hotels will invite the tourist. Now, however, those who go to these places can have the joy of finding primitive conditions; there may be a log cabin camp with its evening fire in the massive fireplace, and its morning ice-bound water-bucket—even

in June or July—giving chill greeting to those who would fill the wash-basin. Or it may be necessary to seek the hospitality of some Forest Ranger, or to eat in a cow camp, or with the timber cruisers—the men who look at a tree as a character analyst looks at a man, and make accurate estimate of the standing timber in a section of the forest.

For a time, in 1919, a company of timber cruisers had their headquarters on the edge of Crane's Prairie, not far from Odell Lake, a remarkable mountain meadow where the forest opens out to make pasture for thousands of cattle. The tumultuous Deschutes River winds its way along its borders—a stream whose flow is so regular that it is possible for the highway to cross it by bridges that are but a foot or two above the water. Any surplus supply of water is lost in the lava through which the river flows.

All through the Deschutes Forest there are marks of the days of fire when the lava poured down from the craters and overwhelmed the earth. Great ridges rise here and there, like slag from an immense steel furnace. Buttes are found in unexpected places, their conical sides one mass of lava. And everywhere are mountains that once belched forth molten fire, but long since become cold and dead.

Most of these craters are worthy of notice, but there is one in particular that surpasses its neighbors as the sun surpasses the moon. Not far from the Deschutes River, as it approaches the lumber-mill town of Bend, is Newberry Crater—with the exception of Mount Mazama perhaps the most remarkable of all the one-time channels of fire in the journey from the bowels of the earth.

Mount Newberry rises three thousand feet above the valley of the river, which is itself more than four thousand feet high. The summit is easy of access, a road practicable for automobiles leading upward through the pine forests until it emerges within the old-time crater. This is eight miles across and of proportionate circumference. Within the uplifted walls of the crater nestles Paulina Lake. Separated from Paulina by a lofty obsidian ridge, and seventy feet higher, is East Lake. On its shore is a little hotel where visitors are learning to go, attracted by the beauty of the surroundings or by the curative properties of the boiling water that gushes up everywhere within the crater, in response to borings in the lava bed. Some day soon there will surely be here a modern hotel, adapted to the needs of tourists and health-seekers. In the meantime visitors have the privilege of seeing the lakes before their commercial exploitation begins.

The twin lakes were long a favorite resort of the Indians, who delighted to glide in their canoes over the waters of East Lake, waters remarkably still save for the surface bubbling of the thousands of springs far beneath. Or they liked to pass from Paulina Lake along its outlet, Paulina Creek, and stand in wonder before the falls where the stream leaps from the lake level over the precipices of lava into the glacier-made canyon leading toward the Deschutes. Usually, however, their errand to the wonderland of the crater was less peaceable. Scattered everywhere were great masses of obsidian, the glass-like substance that served so admirably for their arrow-heads and other weapons of war. Arrow-heads left behind by these old-time artificers may still be found near the shores of the lakes.

NORTH FORK OF ROGUE RIVER, OREGON, NEAR MEDFORD

WHITE PELICANS ON KLAMATH LAKE

PAULINA FALLS, NEAR NEWBERRY CRATER, OREGON

The best view of the lakes of Newberry Crater is not from their shore, or even from the ridge that separates them, but from the rocky summit of Paulina Peak, nearly two thousand feet above, reached by a trail that is practicable for almost anybody. The steepness of the comparatively short way is forgotten when the beholder looks down on the lakes in their setting of green, with lava precipices and ridges about them, and on the lava flow near by which seems like a writhing river, turning round and round in whirls, frozen, black, forbidding. Then the eye leaps to an overwhelming prospect, a vision of tremendous extent and grandeur. To the north, far across intervening plains and lesser mountains, appear Mount Adams, Mount Jefferson, Mount Hood, and even Mount Rainier. To the west are the Three Sisters, Diamond Peak, and Bachelor Butte. In the east, the barren, yellow plains of the Great Sandy Desert, Hampton and Glass Buttes, and the far-away mountains of Nevada lift their heads. To the south is Mount Shasta; and to the northwest are Mount Scott and Mount Thielsen. Thus from this one elevated point of vantage summits in four states are visible.

Sometimes, even in summer, weeks pass without the coming of anyone to rejoice in this tremendous vision. But every day of the summer there is one who keeps his lonely vigil on Paulina Summit—the keen-eyed observer who, from his rocky observatory, sweeps his eye over miles of forest, prepared to send instant word to forest headquarters of the first sign of a fire that might threaten countless miles of priceless timber.

And he is but one of the sturdy, fearless men who watch thus over the area set apart for the enjoyment of the people and the enrichment of the land.

CHAPTER XXVII

A MOUNTAIN DINNER, AND OTHER DINNERS

THE town of Bend, Oregon, is noted not only because of its huge sawmills but also because it is a convenient starting point for all sorts of trips, each of compelling interest and peculiar beauty. Some of them may be made by rail, others by motor, and still others by trail.

Perhaps the most attractive short trip is northwest for fifty miles, through valley and forest, with white-crowned peaks rising in almost continuous line on the west—Broken Top and Bachelor Butte, Three Sisters and Mt. Washington, Three-fingered Jack and Mt. Jefferson—a noteworthy succession of summits from which it is difficult to turn the eyes to more prosaic sights like the Tumalo dam, a state project not entirely successful because no way has been found to retain the water that persists in filtering away through the lava beds. Yet the sight of the sagebrush on land untouched by water and the contrasting green fields of the homesteaders nerves the projectors to keep on striving for the reward that will certainly crown their efforts to add one more triumph to the epic of desert conquest.

At length the forests vie with the mountains in holding the eye. In these forests the brown of the curiously marked bark of the yellow pine harmonizes well with the vivid green of the feathery larches. Then, high above the forest, there towers the great bulk of Black Butte—called black, perhaps, because it is not bare as are some other volcanic cones of the region; it is really green with the pines that crowd its pleasing, sym-

metrical slope. In a spring near the base of the butte the Metolius River has its birth, and soon the road is winding along the banks of this swiftly-flowing stream where the fisherman has learned to seek the elusive trout. Here and there in sequestered nooks by the Metolius are permanent camps where pioneering bonifaces look after the comfort of the anglers.

On a glorious day in June four men motored along the Metolius, in full enjoyment of the rare country. Just at lunch-time a house was seen on whose front was placarded an invitation to rest and eat. But the driver said the men should go on a few miles to a place hidden away in a bend of the Metolius. He assured them that they would not be sorry if they waited, for the dinners cooked there were famous.

At last the ranch was so close that it was almost possible to smell the dinner. But within a mile or two of the promised land a morass across the road caused the driver to shake his head anxiously. A détour led to within a short distance of the dinner, when a bridge repair gang announced, "No thoroughfare." Again a détour brought the hungry quartette within shouting distance of the delectable meal. Imagination was working overtime on crisp trout and blueberry pie when a machine loaded to the guards approached. "How's that for luck?" the driver asked, emphatically. Was something wrong with the engine? Would a third delay be necessary? But a more awful disclosure was to be made. "That's the whole blooming family from the ranch—the Mr., the Mrs., the cook and all the rest," the driver said, in deep disgust. "Now doesn't that jar you?"

But he drove on. What else was there to do? Per-

haps one of the girls had been left behind to look after the house, or possibly the door would be open, after the easy-going, confident manner of Oregon dwellers in the country.

Yes, the door was open. But for form's sake a halloo was given and there came an answering hail from the barn. In a moment the son of the house was at hand.

"Now ain't that too bad!" he said. "Four hungry men, and the folks all gone to the dance at Tumalo. Me? Oh, I'm shearing the sheep! I've finished with seventy-two, and there are only two hundred in all. . . . No, I don't care to go to dances and such foolishness. Me for the woods and the river, every time. . . . Yes, I stay here the year round. Towns get my goat. Last winter the folks went to town, but I stayed on the place. . . . Lonesome? Nothing to it! The place to get lonesome is in a big town like Bend. . . . I had the time of my life here. There was plenty of work, and there was lots of loafing. Killed three deer, the two the law allowed, and one I didn't get the winter before. You should have seen the buck that led me a chase beginning at that point of rock over there; he was off before I could pot him, across the river and through the pines. Finally I got him over there on Green Ridge. . . . Get tired of deer meat, you say? I could eat it three times a day, every day in the year. . . . Snow? Oh, yes, it did snow some. See that fence? Well, the snow was up to the top bar. . . . Can I cook? Well, I guess—but not like Marm. You should taste her dinner. Don't ask any Oregon rancher if he can cook. . . . Like

something to eat soon, you say? Well, just wait till I change these sheep clothes and wash up!"

It was a pleasure to see the way he went at that dinner. Some school of domestic science ought to endow a chair of kitchen fire-building and invite that young sheep-shearer to be the incumbent. And the way he cooked! It would not be fair to tell what was set on the table an hour later; there might be too many inquiries for the location of that ranch.

After dinner the cook was persuaded to leave his beloved sheep long enough to point out the trail to a camp five miles down the river. "First time I've been here in three years," he said. Now that the unwonted outing had been taken those who heard him wondered if he would wait three years more before repeating the performance. Perhaps so—at least if one could judge from the eager lope with which he hurried off to the ranch when he was deposited a mile away in the forest.

The sheep-shearer had company among the cooks who ministered to the quartette that week. There was the lone tender of the dam at Pringle Falls, the deserted village in the forest where the sawmill stands idle with a log on the carriage, where the workmen's homes are empty and the closed post-office still contains in the boxes papers uncalled for when the town met the fate of so many settlements in the forest. Fortunately the home of the watcher at the old dam was occupied, and what a dinner he did cook! Fish was the chief thing on the bill of fare—fish directly from the stream, fish by the platterful, more fish for each hungry man than it is wise to say.

Another sawmill that was not deserted was ap-

proached just as the whistle sounded the welcome call to the mid-day meal. The hungry travelers were given leave to respond with the workers, and they decided that those mill men have no cause for complaint against the autocrat the company has placed in charge of the kitchen. Quickly the bountifully spread table was cleared, and then the men, each bearing his own dishes with him to the pantry, hurried away, some to work and some to play.

A cook who knew his business was found at a camp of timber cruisers in the depths of the forest. "Sorry I haven't anything extra to give you," he apologized. But if the meal he served was ordinary, let ordinary cooking be made compulsory! Men of the woods need substantial food, well cooked, and the cook at that camp knows how to give it to them.

On a lonely peak nearly nine thousand feet high, at a forest signal station, the travelers found a man on lookout duty. His supplies of food were still meagre; most of the eatables provided for him were waiting far down the trail below the drifted snow. But the men helped him bring in the cached supplies, and then were ready to share his fare. They were thirsty, too, but when they saw how little water there was in his cistern above the clouds they forgot thirst, and wished him well in his task of filling the tank with snow that water might be at hand during the long days and nights of his summer vigil.

Perhaps the best-remembered dinner of the season of western wandering was served at Stehekin, the landing-place nestling at the upper end of wonderful Lake Chelan, in Washington, in the shadow of the towering Cascades. During the fifty-mile trip on the little

LAVA LAKE, THE THREE SISTERS, AND BACHELOR BUTTE, OREGON

"CHOOSE YOUR FISH," LAKE CHELAN

steamer the appetite of the travelers was stimulated by tales of the glorious trout taken from the waters of the lake. So at Stehekin's hotel request was made for a fish for dinner. "Sorry we cannot oblige you," was the reply of the host. "You see, the law will not permit us to serve fish!"

With a sigh the determination was made to put up with plain bacon for another meal. But skies cleared instantly when a young woman near the clerk said: "We caught a string of beauties this morning, and we can't eat them all. Choose your fish!"

The men-hungry-for-trout turned to see two laughing young women in outing costume proudly holding up an array of fish. They smiled at the protest that one fish would be sufficient for two men. "No, you want one each; they do not weigh more than two pounds and a quarter to two pounds and a half!" Why refuse an invitation like that?

When the fish were handed over by the generous catchers they looked appetizing enough. But when they were laid on the table, glistening, brown, crowned with bacon and lemon, who could resist them? Half an hour later not a shred of either trout remained.

There is nothing like mountain wandering to make meals appetizing—that is, nothing but hard work. Yet the day comes when work drags and appetite fails. Then off for the deep forest, the steep trail, or the winding river, and find new life!

CHAPTER XXVIII

THROUGH CANYON AND GORGE TO PORTLAND

UNTIL recently map-makers called Bend Farewell Bend. The name was given by pioneers bound for the Willamette Valley because here, at the one spot practicable for crossing the Deschutes, they had their last view of the river.

Almost the entire distance from Bend to the Columbia, the Deschutes is hidden far down between canyon walls that were as forbidding to the pioneer as they are now inviting to those who delight in looking on scenic grandeur or who wish to examine the records of earth-building.

Not many years ago it was impossible to study the great gash in the earth, except at isolated places. Now, however, two railroads follow the river from the mouth up to Bend, for those rivals in railroad strategy, Hill and Harriman, ran a race to see who would first reach the headwaters of the Deschutes. The story of the struggle is one of the fascinating chapters in the record of railroad building. Legal battles and illegal clashes between the construction forces were finally ended by a truce, and for the last sixty miles of the journey the two roads use one track.

Fortunately the entire distance may be traversed during the day, so that it is possible to study the canyon in all its marvelous outlines, and to carry away some idea of what the United States Geological Survey has called "the fascinating story of deep erosion, of subsequent lava flows of vast extent, and of renewed

COLUMNAR BASALT CLIFFS

THE HORSESHOE, DESCHUTES RIVER CANYON

outpourings of molten rock, followed by another long period during which streams renewed the work of denudation and canyon cutting." Massive and extensive as the canyon is, it gives but a hint of the vast extent of the lava fields and volcanic mountains of the northwest, for it is estimated that "not less than 150,000 cubic miles of dense rock have there been transferred from deep within the earth and spread out on its surface." These lava deposits vary in appearance from the glass mountains and peaks of white pumice in a part of Southern Oregon where one traveler said he felt as if he were living over Alice in Wonderland, to the black, forbidding ridges of lava and the buttes and canyon walls farther north.

In cutting the path through a great lava-covered plain the Deschutes has found its way far below walls where regular pyramids and rugged peaks, castellated crags and symmetrical cones follow one another with bewildering rapidity; where columns of basalt stand out in the precipices, sometimes in most orderly array, again in fascinating confusion; where overlying layers of sandstone lend color to the abyss. The gorge is frequently a mile wide and eight hundred feet deep, and at least five distinct geological episodes can be traced in a study of the walls. First came a deposit of volcanic dust; then lava covered the dust; then the river cut its way through the lava; then a second lava flow filled the canyon to a depth of some five hundred feet; and finally the river cut its way once more through the later lava flow.

The journey through the Deschutes canyon should come before the study of the great Columbia Gorge from the mouth of the smaller river on to the Pacific.

SANTA CLARA COUNTY FREE LI

During countless ages the great "River of the West" has fashioned a gorge that those who have traveled the world over say is not to be matched anywhere. Visitors may say, "That reminds me of the Highlands of the Hudson," but before they complete the journey they are apt to forget comparisons in the silent ecstasy of those who realize that they are gazing on one of the masterpieces of the Architect of the Universe.

Proudly the Oregon Bureau of Mines and Geology calls attention to the fact that the Columbia is one of earth's greatest rivers, and that more than twenty-one hundred miles of the stream and its tributaries are navigable water. Then it adds a statement far more picturesque than any figures: "The Columbia River is further distinguished because of its having cleaved from summit to base, completely through the structure of a great mountain mass—the Cascade Range. . . . As a result of her prowess . . . the river has become the front doorway to a vast empire."

From the time of the first discoverers of the Columbia to the stirring days of the Hudson Bay Company's traders and trappers, and of the emigrants who made their toilsome way down the valley toward the sea, there have been recorded tales of amazement at the wonders of the river scenery. The building of the railroads, first along the south bank, then along the north bank, enabled thousands to enjoy these wonders where before one had been able to do so. But not until the recent completion of the great Columbia River Highway, magnificent in conception and stupendous in achievement, has it become possible to see the river and its noble surroundings as these cannot be seen from the windows of a Pullman car. For years Samuel C. Lancaster dreamed

of the road and talked of it to those who laughed at his idea. But he clung fondly and persistently to his vision; again and again he toiled over the bluffs and the mountains, seeking the most practicable route. At last he saw the day when funds were available, and the project was finally completed. Then his acquaintances no longer laughed; gladly they joined the hundreds of thousands who each year pass over the Highway.

The United States Forestry Service is coöperating with the authorities of counties and states in making the Highway of greatest service to the people. A portion of it traverses the Columbia Gorge Park Division of the Oregon National Forest, a division which includes about fourteen thousand acres, all dedicated to purposes of recreation, so that not only the tourist, but also the fisherman, the camper and the lover of the long trail may be satisfied here.

Noteworthy among the recreation areas is Eagle Creek Canyon, where there are camp grounds, parking space, comfort stations and a winding trail that goes far back up the gorge of Eagle Creek to beautiful Punch Bowl Falls, two miles from the river, and the Wahtum Lake, fifteen miles farther. The story is told of one of those who laid out the trail that one day, when on a narrow path on the face of a precipice, he was confronted by a bear that disputed the passage. The trail-maker had no weapon, but in desperation he raised his hand and waved Bruin back. The bear retreated, hesitated, then returned. This time the endangered man raised both hands in warning and appeal. Once more the animal walked backward most sedately. Then, after a second pause, he returned to confront the man on the trail. Finally the man raised both hands and

gave a whoop of—was it of terror? This was too much. Bruin retreated a third time, and was not seen again.

While most travelers begin the delightful Gorge tour at Portland, it is really better to go down the river towards the city by the Willamette, from the point where the Deschutes joins fortunes with the larger river, or from Hood River, the little city at the mouth of the fertile valley of that name, one of the numerous valleys in Oregon, famous for land so well adapted to the growth of luscious fruits.

For seventy miles from Hood River the journey is a bewildering succession of vistas of river and mountains, from easy stretches of perfect road; from the portals of a tunnel through a massive cliff, where parapets have been built out from the precipice; from lofty Crown Point, approached by one of the finest bits of road-building on the continent, a long succession of figure-eights, where the grade never exceeds five per cent. and the radius of the curve is never less than one hundred feet. Near the summit of Crown Point the balconies of Vista House and the balustrades before it afford a view up and down the broad river for seventy miles—a view of cliff and island, of graceful bends and long sweeps between, of glittering cascades and more quiet waters, of green mountain slopes and tremendous precipices of columnar basalt. The changing lights of morning, noon and night give infinite variety to the stately scene, but the prospect is best at sunset, when the long and varied stretch of water becomes golden glory, when green mountain and nestling island, rocky precipice and uplifted pinnacle, are painted as no artist would dare to paint them.

There are precipices along the river that do not need

VISTA HOUSE, CROWN POINT, COLUMBIA RIVER HIGHWAY, OREGON

INTERIOR OF MITCHELL'S POINT TUNNELS, COLUMBIA RIVER HIGHWAY, SHOWING "THE FIVE WINDOWS"

WILLAMETTE VALLEY, NEAR NEWBURG, OREGON

to wait for the coloring of the sunset. Prominent among these are Red Bluffs, a portion of the north abutment of the Bridge of the Gods, which, according to Indian myth, once stretched at a great height and for a distance of five miles above the river. According to the wonder-tale this bridge was built by Sahali, the Great Spirit, who separated the Klickitats of the north from the Multnomahs of the west, by raising between them the Cascade Range. Through the mountains flowed the Columbia, and across the river was thrown the great bridge. On the bridge was stationed Loowit, guardian of the sacred fire, the only fire in the world, from which the Indians of all tribes received supplies. Among the Indian chiefs who fell in love with the beautiful guardian was Klickitat from the north and Wiyeast from the west. The rivals went to war and ravaged the land. In anger Sahali broke down the bridge and killed the fire-guardian, as well as the two chiefs. Over their graves he built great monuments; Mount St. Helens became a monument to the fire-guardian, while Mount Hood and Mount Adams commemorated the rival chiefs. It is easy to see the broken abutments of the bridge far up on Table Mountain, the fragments of rock in the river below, and the snow-capped peaks named in the legend.

The haunting beauty of fairy-like waterfalls will be one of the most treasured of all the memories of the Columbia Gorge trip. Most of them may be seen from the Highway, though some are hidden back in tributary canyons. Metlaka Falls in Eagle Creek, two miles from the river, are more than one hundred feet high, while Oneonta Falls, less than a thousand feet from the Highway, are nearly as high. Wahclella Falls, in Tanner Creek, are higher still, and Elowah Falls, on McCord

Creek, descend nearly three hundred feet. Horsetail Falls, more than two hundred feet high; Multnomah Falls, six hundred and twenty feet high, and Latourell Falls, more than two hundred feet high, are visible from the Highway itself.

While the falls can be seen to greatest advantage only by those who stand close to them, there are other features of the river landscapes that are visible from many points on the Highway. The Pillars of Hercules, one of them crowned by a single pine tree, are monoliths of basalt dwarfing the trains that pass at their base. St. Peter's Dome rises two thousand feet above the river. Then there is Beacon Rock, on the north shore, named by Lewis and Clark in 1806, where—tradition says—the *voyageurs* of the Hudson Bay Company on their annual journey to Vancouver were accustomed to begin their homecoming song. A trail four thousand feet long has been built up this great rock, that visitors may be able to enjoy the wide vista from its top, eight hundred feet above the river.

Portland rejoices in having such an approach as is afforded by the Columbian Gorge and the twenty miles of fertile farms that come between the city and the majestic mountain barrier farther up the river.

Those who see sturdy, business-like Portland, will smile at words of prophecy that appeared in 1868 in the *Overland Monthly:*

It will be seen at a glance that the trade and commerce of such a valley must in time build up and sustain quite a city. Yet it is not in the highway of the world. It will never be the center of fashion, speculation, or thought. Its population may not in the century, if ever, exceed 50,000. Yet, if any young person who reads this

PORTLAND, OREGON: MOUNT HOOD IN THE DISTANCE

is casting about for a place where a fair stock of sense, industry and good habits will, within certain limits, pay certainly and well in any honest calling, let him or her take passage at once for Portland on the Willamette.

Portland might have been known as Boston, for, in 1848, the founders of the town—one of whom was from Massachusetts, while the other was from Maine—flipped a copper cent to decide whether the name should be Portland or Boston. The Maine man won. At that time Oregon City was the capital of Oregon, and in the beginning Portland was known as "a place twelve miles below Oregon City." All this was changed, however, with the removal of the capital in 1851. In 1869 the city had, according to a description written at the time, "from eight to nine thousand inhabitants, who pay almost a New England respect to the Sabbath, and dream sometimes that it is a rival of San Francisco."

And now, from Council Crest, the visitor looks down on a proud city whose population approaches three hundred thousand, and whose port rivals that of Philadelphia or Baltimore.

CHAPTER XXIX

OLYMPIC WANDERINGS

THE Forest Ranger who accompanied the author from the Columbia to the Capital of Washington, and then on for days of delight in the Olympic Peninsula, proved a proper guide to the land whose name, as well as its scenery, speaks of Homer and the Iliad, of music and gaiety, of poetry and pleasure. For he was a real musician. During a pause at a wayside ice-cream parlor his fingers found their way to the keys of a piano. At the first note an old man who had just started on an errand across the road, paused at the door, entranced; his pipe was allowed to go out, his eyes danced, his entire attitude showed how he was carried away by the tender, familiar strains he had not heard, perhaps, for years. The woman of the ice-cream parlor stood for fifteen minutes at another door, and not until the piano was still did she think of the dishes she had gone to fill.

The forester proved his skill a second time, when, during the hour after sunset, he began to sing old ballads in a subdued tenor that charmed away the weariness of a long day's travel and made a chance passenger, picked up by the way, forget the pain because of which he was going to a physician in Olympia.

A third time the revelation came when a tree or a mountain, a bird or a cloud, would turn his thoughts to Bryant or Wordsworth, Kipling or Stevenson, Shakespeare or Browning, and he would softly and sympathetically quote a few lines or a stanza or two, some-

times an entire poem, never obtrusively, but always so as to deepen the impression made by the landscape as he led the way through forest aisles where tall straight trunks reach like green flagpoles far aloft, by rivers, sweeping proudly to the Pacific, or over Cowlitz Prairie, with Mount St. Helens on the east and Mount Rainier looking down from the north. This prairie, by the way, was the scene of the Hudson Bay Company's farming operations in a day when they scattered far and near the gloomy tidings that the Oregon Country could never be the home of husbandmen. Fortunately their interested propaganda was made ineffective by such men as Marcus Whitman and Jason Lee, who carried back to friends in the East the word that the territory that is now Washington and Oregon could support millions.

To-day the millions foretold make their homes in the favored land, while representatives of other millions seek the country each year for purposes of recreation. Unfortunately, however, most of those who go to Washington confine their investigations to that portion of the state that lies east of Puget Sound, unmindful of the fact that to the west of that extensive inlet from the Pacific lies a land that is crowded with mountains for the climber, lakes for the boatman, rivers and streams for the angler, and forests filled with game for the hunter—forests that boast one-seventeenth of all the merchantable timber in the United States.

A few years ago this rich section was difficult of access, but, since the completion of the Olympic Highway and the continued development of the Olympic National Forest, there is no excuse for passing on the other side of the marvels of the peninsula.

From Olympia the Highway leads to Hood's Canal,

the arm of Puget Sound that looks like the Highlands of the Hudson, with added charms of its own that make the forty-mile journey along its western shores one prolonged experience of gladness. And when the sparkling blue waterway is left behind, its place is taken by long journeys through vast forests of Douglas fir and cedar and hemlock where the eye turns with keen relish to the ranks of trees among which darkness reigns even at mid-day, or follows the tall stems upward until they seem to touch the blue sky. Sometimes the road drops into a mountain glen where the sunlight barely penetrates to the ground, or takes precarious foothold on a winding ledge far above a canyon in whose depths a snow-fed stream rushes on to some convenient river, among the trees that clothe the sides of the abyss up to the Highway or far up the opposite slope, joining the forest on the mountain side.

It is good to be among Washington's wonderful trees early in the morning, when the sun is casting young shadows. Yet those who pass through the dense timber growth at noontime think this the best time of all. Some prefer a rainy day, when the thick foliage is like an umbrella and the forest has the air of profound mystery. But the choicest hour is the twilight, when the cedars on some stand like minarets against the evening sky, when the tops of the firs and the hemlocks are graceful silhouettes with a background of blue fading into gray.

The winding road along the ridge above Elwha River —whose milky waters tell of their origin amid the glaciers of Anderson Range—seems to the traveler to be the acme of a forest road, until he goes farther and finds Douglas firs that are so many feet in diameter that

LOOKING WEST ON LAKE CRESCENT, FROM EAST BEACH; PYRAMID MOUNT AT LEFT

it is perhaps better not to give figures; cedars that are stately as a monument, and hemlocks that stand like sentinels in the midst of their crowding neighbors. Sometimes these roads wind in bewildering fashion among the monarchs; again they lead straight as an arrow for three or four and once even for six miles. So thick are the trees that those bordering the roadside seem to be planted at regular intervals, and in a line almost exact. Under the trees are the ferns and the moss-grown prostrate trunks, or the rhododendrons, or sometimes the bushes that flaunt their yellow or red salmon berries, the delight of the bears that are still found in these Olympic shades.

Yes, there are bears here, and wolves, and elk. Chris, the veteran Forest Ranger, who came to the country from a New York City banking house when he was nineteen years old, tells of his recent pursuit by two wolves that refused to be scared away until he had beguiled and deceived them for an hour. He will not soon forget those long moments of tense anxiety. He has more pleasure in thinking of the eight thousand elk now scattered over the mountains of his forest, in consequence of the law that threw protecting arms about them when they were in danger of extinction.

The Elwha River is a favorite haunt of the elk, as it was the scene of the contest of wits with the persistent wolves. Just beyond the Elwha lies Crescent Lake, where Chris once picked up the magnificent spreading horns dropped by an elk in moulting season, horns later sold for four hundred dollars.

Crescent Lake is the rear entrance to the wonders of the Olympic Mountains. Its blue waters rest amid surrounding foothills which crowd close and once almost

come together, forcing the lake to make the passage that helps to give to it the shape from which it takes its name.

Until recently the lake was a link in the Olympic Highway; the road had not been built around its shore, and county ferries carried travelers for the ten miles between the section of the road from Olympia and the western section leading to the Pacific and the village of the Siwash Indian seal-hunters beyond Mora.

When the Olympic Highway claims the south shore of Crescent Lake, this once almost inaccessible waterway will be entirely surrounded by the arteries of civilization and progress. For, in 1918, on the north shore, was completed one of those stupendous government works that hastened the coming of peace in the Great War—the Spruce Division Railway, which was to bring from recesses of the Olympic forest the timber needed for the projected fleet of war airplanes. The railroad was of little use for the purpose for which it was built, but in days of peace it will be of untold value in developing the resources of the Peninsula, and in carrying to and fro those who seek the lake on whose wooded shores cottage sites and vacation areas were preserved inviolate by the coöperation of the War Department and the Department of Agriculture.

But railroad and highway have not yet succeeded in reaching to the recesses of the Olympic Peninsula. Those who would go into the mysterious cloud-wrapped mountains and study the glaciers and the torrents, or penetrate to the densest sections of the primeval forest, where massive, stately firs are to be found in greatest abundance; where rich, rank undergrowth springs under the trees in a manner truly tropical; where the moss hangs in festoons from the branches; where game and

fish abound, must take to the upland trails that lead to all parts of the national playground. Some of these trails are difficult, and some will put to the test all the mountain-climber's endurance. But all are fascinating, and those who follow them will return with enthusiasm akin to that of the hiker from near-by Port Townsend, who told of the impressiveness of standing on the mountain slopes and watching the clouds form and disappear beneath him:

From a perfectly clear sky a wisp of cloud would come floating over the shoulder of Mount Constance, and go winding down the valley, like an advancing army. Tributaries would go swirling up the lateral divides like skirmish lines from the main body. Eddying air currents would beat back the encroaching mists; but, though momentarily checked, the hosts of the sky would marshal their columns, force their way to the heads of the draws and go tumbling over the crests in one seething, billowy mass of obliterating whiteness. Here and there some lofty crag or tree top would appear above the flood, showing black as night against the background of sky and cloud.

CHAPTER XXX

ON PUGET SOUND

PUGET SOUND has been called "the Mediterranean of America," but a far better comparison was made by John Muir when he likened it to Lake Tahoe. And why not? Why should it be thought necessary to go to Europe for a likeness to Washington's great waterway when America is able to surpass all the scenery of Europe?

If the Strait of Juan de Fuca be included in the estimate, as it should be, the area of blue water in the great inlet from the Pacific is about two thousand square miles —two thousand miles bordered by mighty forests, thriving towns and cities and towering mountains; traversed by great ships that pass to and from all nations; dotted with green islands that tempt the camper and the home-seeker; and explored by the tireless athlete and the sportman in graceful yacht and noisy motor-boat.

Most people think only of Seattle and Tacoma as Puget Sound cities, but there are others that should be remembered by those who delight in the picturesque. There is Port Angeles, the lumbering center, celebrated for the pleasing views afforded there of the wonderful sunsets beyond the hills of British Columbia, when the Straits are painted in indescribable colors, and of the reflection in the rippling waters of the rising moon that seems never to be so radiant as above Puget Sound. There is Port Townsend, with its immigration station, and Anacortes of the salmon canneries, whose founder, Amos Bowman, named it Anna Curtis, in honor of his

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MOUNT RAINIER, FROM SPRAY PARK

ON THE TOBOGGAN, PARADISE PARK, MOUNT RAINIER

wife; a town to be remembered with Auburn, farther south, which was first called Slaughter, for a naval officer, but the coming of the railroad made necessary so many repetitions of the unpleasant invitation, "This way to the Slaughter House," that the name was speedily changed. There is Gray's Harbor, known as Bulfinch Harbor until it was decided that the place should do honor to Captain Robert Gray, discoverer of the harbor, instead of to the owner of the discoverer's ship *Columbia*. There is Bellingham, where electric lights glowed when the stumps of great trees still stood in the streets; Everett, where ocean steamers dock, and Olympia, Washington's capital, the city of oysters, wooden ships and comfortable homes.

But Seattle and Tacoma dominate the Sound. When these neighboring cities had but twenty thousand people each, Muir wrote that they were "far in the lead of all others in the race for supremacy." Then he added, "These two are keen, active rivals, to all appearance well matched."

Both cities have had a strenuous record of conquering obstacles, and each has won distinction and deserved admiration. The searcher for attractive surroundings finds it difficult to choose between them; Tacoma looks out on the Olympics to the West and on the Cascades to the East, and boasts miles of parks and perfect roads. Seattle has made the most of its waterways and inland lakes, and looks serenely from its hills on the country that pays it tribute. Tacoma's people are perhaps more conservative, but Seattle's three hundred thousand are ever sighing for more difficulties to conquer.

Upon both cities Mount Rainier looks down from its height of 14,408 feet—not one hundred feet less than

Mt. Whitney, the highest mountain in continental United States; and from both access is easy to the summit sought by so many mountain-lovers. Good roads enable the dwellers by the Sound to pass in the automobile—and within four or five hours—to Paradise Valley, above Nisqually glacier. And what a ride of vision theirs is! By an easy grade they go through forests, along canyons, by the Nisqually, whose tumultuous course from the glacier to the sea is so brief, clear to the gate of Mount Rainier National Park. Then across winding streams and above the tops of lofty trees, in canyons surmounted by switchbacks and other engineering triumphs, within sight of leaping waterfalls, to the bridge that crosses the Nisqually only a few hundred feet below the spot where the waters flow from under the ice of the parent glacier. Beyond the bridge the rapidly mounting road is so narrow, and the height above the canyon is so tremendous, that ascending autos are allowed to depart only at specified hours, while descending machines cannot begin their remarkable course until there is no possibility of encountering an opposing machine. At Paradise Valley—the abode of flowers in summer, the scene of the great ski contests in winter, the point from which majestic views may be secured at all seasons—the road gives way to the trail, where men and women begin their twelve-hour climb to the far-off summit for the vision afforded there, a vision of at least one hundred miles in every direction.

James Bryce, the English author of "The American Commonwealth," after looking from this summit, declared that "the combination of ice scenery with woodland scenery of the grandest type is to be found nowhere in the Old World, unless it be in the Hima-

THE ORIGIN OF A GLACIER

layas, and—so far as we know—nowhere else on the American Continent."

There are almost as many possible approaches to the great mountain as there are glaciers radiating from its mighty sides. To ascend by any one of these is a triumph; each has its own peculiar charm. But the greatest triumph of all is reserved for those who follow the trails that make the circuit of the peaks, passing from glacier to glacier, and so discovering one by one visions that enrapture and amaze. Those who take the arduous journey will be ready to join in the involuntary exclamation of the first visitors to the valley of flowers above Nisqually glacier. "What a Paradise!" was the tribute—a tribute year after year echoed by the thousands who pass from the waters of Puget Sound to persuade Rainier to yield her secrets.

CHAPTER XXXI

THE JOY OF THE OPEN ROAD

"DO you folks who live among these mountains appreciate your privileges?" a visitor asked a resident of California, at the beginning of his own pilgrimage among scenes of overwhelming grandeur.

If he had waited a week or two the query would have been unnecessary. For everywhere he went that summer he found travelers bound for the forests, the lakes, the mountains. There were men trudging along the road, with packs on their backs, smilingly declining the offered lift in a passing machine; they were out for a hike, and they could not think of lessening the joys of vacation by entering a motor-car. There were women on horseback, with their outfit on a led pack-horse; there were whole families in automobiles whose equipment was roped to the mudguards, strapped on behind, or overflowing from the rear seat where children could be distinguished from their miscellaneous surroundings only by their gleeful voices. The women and children wore garments like those of the men, and they bore themselves as naturally in their sensible garb as if it was the accustomed dress of every day. Indeed, many women wear their outing dress about the house, on the ranch, or even sometimes in the market town, if an errand calls them there suddenly.

Clothing is not the only evidence of naturalness and comradeship. All who travel the road have a cheerful greeting for the passer-by; there is almost invariably a wave of the hand and a smile that seems to say, "Isn't this the life?"

ON THE TRAIL, SNOQUALMIE FOREST, WASHINGTON

ENTRANCE [illegible] SNOQUALMIE NATIONAL FOREST

PACK TRAIN LOADED WITH DOUGLAS FIR PLANTS

GETTING BREAKFAST, BLEWITT PASS HIGHWAY, WENATCHEE NATIONAL FOREST, WASHINGTON

These wanderers from home are not all of the leisure class, either. Clerks from the city and ranchers from the country fish together in the stream or pass one another on mountain trails. A Seattle stenographer who was brought up amid the more prosaic surroundings of the East cannot now be content unless she has her weeks of roughing it in the mountains. "It is so good to sleep on pine boughs for a few nights, and to wear clothing in which I would not receive callers," she said.

The family of a Portland office worker finds health during two months or more of the summer in six acres of forest land near the city. There father and mother sleep on the ground and all eat daily in the manner that more sophisticated people can put up with only for a single picnic meal. Some day that man hopes to have a rough shack on his land; but he is content to let his lumber season for an unreasonable length of time, for he is loth to give up the sleeping-bag under the stars. That lumber, by the way, came from a near-by rancher who insists on supplying his neighbors from his little sawmill, at a price two-thirds that offered by city dealers. "If I should contract with them," the man said, "there would be nothing left for my neighbors. Then I never did charge over fourteen dollars a thousand for lumber, and it is too late to begin now."

Ranchers are especially eager to respond to the enticing invitations to share in the joys of the out-of-doors that are sent broadcast by the Forest Service; they camp with their families by river or lake, perhaps moving on after a few days to another desirable spot, and they return to the home soil really refreshed. "We must go away to-morrow to our ranch two hundred

miles from here,'' said one rural camper whose wife and children were with him about the campfire. ''It is not easy to go when the trout are biting as they did to-day; we caught fifty pounds of trout. But the wheat will be ready to harvest next week. Be sure we're coming back next year, though; or perhaps we'll go somewhere else, to fish, and camp, and get made over new.''

Everywhere in the West there are public camp grounds, provided by individuals or communities, by the state or by the Forest Service. Some of these camps can accommodate scores; others are intended but for one or two families. It is possible to go all the way from San Diego to the Canada line, spending every night on one of these camp grounds. In many of them rude fireplaces are provided, as well as other comforts. In the forest camps wood may be gathered freely, and in some of them a supply of cut wood is always available.

''Isn't it wonderful what is done for us by the Forest Service?'' a camper remarked. ''We have feed for our horses, as well as fuel, and we are free to fish in the streams and hunt in the mountains, so long as we obey the laws of the state. When I wanted information about the camping grounds and roads, I applied at the office of the Forest Supervisor, and was given a map and full information. If necessary, we can use the telephone line established for fire protection purposes, and wherever we go we find cross-road signs and trail directions that send us on our way.''

The detail maps of the National Forests given to all who ask for them are marvels of accuracy and detail. The explanatory legend on the map of Washington's Wenatchee Forest, for instance, is quite inclusive: it tells of the location of ranger stations where informa-

tion can be secured; of lookout stations where is the widest possible view of the surroundings; of wagon roads, private roads, trails, telephone instruments, public camping grounds, hotels, schoolhouses, cabins and tool boxes. The entire map is conveniently laid off in sections one inch square. Think of going camping with such provision for comfort and safety, and in a region where there are not only routes for the automobile, but practicable trails that lead to wild summits and hidden canyons and mountain lakes where the trout bite freely because they have not been taught by a horde of fishermen that it is not wise to take flies that look tempting but lead only to the sportsman's creel.

The exclamation of the rancher who thought such provision for the vacation-seeker was remarkable was repeated to the supervisor of one of the forests. "No, it is not wonderful," he said. "These forests belong to the people. It is our business to tell them of their property, to lure them to their heritage—not only to the trail or the camp, but to the site for cabin or more pretentious houses which have been laid out on the shores of the lakes, by the stream, or deep in the forests. The people are coming. Let them come. For the forests—their forests—are calling them; it is our delight to be the means by which the call is made known."

CHAPTER XXXII

ACROSS WASHINGTON'S INLAND EMPIRE

LESS than a century ago men would have laughed at the idea of applying to the valley of the Columbia the term "Inland Empire." There were few who had a good word for the vast area that has given to the country one of its most fertile lands. In 1837 Thomas J. Farnham wrote:

Above the Columbia there is little worth-while land. The forests are so heavy and so matted with brambles as to require the arm of a Hercules to clear a farm of one hundred acres in an ordinary lifetime; and the mass of timber is so great that an attempt to subdue it by girdling would result in the production of another forest before the ground could be disincumbered of what was thus killed.

Six years later United States Senator McDuffie declared that he would not give a pinch of snuff for the whole Oregon country, of which the present state of Washington was a large part. Even as late as 1865 Captain John Mullan, who wished to encourage emigration to the valley of the Columbia, found it necessary to write:

Though it has pleased many persons, for reasons which I am not charitable enough to think were even satisfactory to themselves, to term the great plain of the Columbia River an immense desert, I am still sanguine to believe that in this same plain or so-called desert we shall find as rich a wealth as the desert of Colorado is now sending forth to the commercial world.

This desert, and the river flowing through it, has been favorably compared to the Nile, the enriching influence of which has made Egypt the granary of the East since the earliest period of men.

It may be true that there is much waste land in the valley of the Columbia, but it is also true that in the valley of the Columbia and its tributaries are some of the country's most productive orchard lands and grain fields. There are valleys of almost boundless fertility, like the Yakima, the Wenatchee and the Walla Walla, where fortunes are made in raising fruit, though these were barren slopes until irrigation brought to them the transforming waters; there is the great wheat plateau of the Big Bend country, where the Columbia changes its majestic course; there are the Okanogan Highlands, where Indian lands have been thrown open to settlement in comparatively recent years, where fruits are abundant and cattle thrive wonderfully; and there are a dozen other regions which unmistakably give the lie to the doleful prophecies of the pessimists of past generations.

Of the four great roads that go to these spots of fertility and beauty, perhaps first place should be given to the Sunset Highway that leads out of Seattle, over the Cascade Mountains, and on to Spokane, by rushing rivers and sky-blue lakes, within sight of great cataracts and across dry coulees—the beds of water courses that have long since disappeared, and through miles of orchards whose trees provide the fruit that is to give loads to the scores of refrigerator cars to be seen, at any time during the long season, waiting on the railway sidings in towns that may not boast as many houses as there are cars. And this in a country of which, in

1837, a settler said, "It is probably not worth half the money and time that will be spent in talking about it."

A humorist must have had something to do with marking the mile posts along an early portion of the highway to the country of which these disparaging words were spoken. Between Sammamish Lake and Falls City the signs on the posts record the fact that the distance to Falls City is 7.9 miles, 6.9 miles, 5.9 miles—never, by any chance, is the measurement in even miles. The use of these unusual figures might be more easily understood if the country were unattractive; then the markings would help to distract the traveler's mind. But what can be the object when every mile of the country is so attractive that there is hardly time to look at the signs or to realize that the distance to the next town is even worth measuring?

As if the rugged beauty of the rapidly ascending country is not sufficient, the Snoqualmie River unexpectedly calls the traveler a few rods from the road to see the mad plunge of its waters over a sheer cliff 268 feet to the abyss below. With the background of mountain and the surroundings of vivid green, the foam and mist of the falls are most alluring. Fascinated, the observer does not find it easy to pass on to the Twin Falls in the same river, only a few miles on toward the mountains. The rough trail that leads to these falls—one of them a tumbling cascade, the other a true fall—adds to the pleasure of the downward climb from the highway to the edge of the stream that makes its waters perform so many gymnastic feats. All too soon will come the day when the trail will yield to the cement steps that will be demanded by luxury-loving visitors, but to-day those who delight to go where improvement

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SNOQUALMIE FALLS, WASHINGTON

has not yet been made on Nature's provision for safety and comfort may still take delight in these upper plunges of the Snoqualmie, where power was generated for use in building the immense fill for the railroad on the heights above the river, one of the greatest embankments in the world.

Beyond Twin Falls is a thick forest where, now and again, a blackened trunk is seen among the trees—evidence that long ago the forest was destroyed and that Nature has managed to reclothe the land left naked. Yet there are those who say that it is useless to expect lands once burned over or cut over to be ready again for those who know how to use the forests. Naturally the men of the forests have a different vision.

The road leads on to Snoqualmie Pass, through cedars and Douglas firs whose straight, tall trunks make imperative the dropping of the automobile top, that there may be an uninterrupted look up, up, up to the tree tops, and then to the blue sky above.

Through the trees Granite Mountain appears and unlocks the tongue of the Forest Ranger in the machine. "Up there I got my first bear," he began. "Louis and I were running lines. I had not wanted to take my six-shooter that day, but Louis had insisted, fortunately for us both. We suddenly came on Bruin eating blackberries. Now you would not like to be interrupted at such an occupation. Neither did the bear. He was somewhat peevish, but instead of climbing higher, as a wounded bear usually does, he cornered toward me down the mountain side. I gave him another shot, and he tried to go for me. I was up hill from him, though, and he was not strong enough to climb. So he ambled slowly down the hill. For half a mile he struggled.

Then he fell dead, within a few rods of the camp. A most accommodating bear, if he was peevish! He must have known that we did not want the task of carrying his huge body down the mountain side to the camp."

Just below the scene of the bear adventure Denny Creek Camp Ground makes the traveler wish to anticipate the evening that he may roll up in his sleeping-bag on the banks of Denny Creek, in the amphitheater made by the towering mountains, from one of which passengers on the train of the Chicago, Milwaukee and St. Paul Railroad can look down, just before they enter from the west the tunnel at Snoqualmie Summit. Between Snoqualmie Pass and Blewitt Pass lie many miles of delightful road through the towering forests, by the side of majestic Keechelus Lake, and within sight of Kachess and Cle Elum lakes. The side road that leads over Blewitt is far from being the almost perfect series of easy spirals that led to Snoqualmie Summit, but the rugged surroundings of the more easterly and higher pass make the greater difficulties of this spot, famous since the days of the gold-seekers, seem well worth while. A few miles from the pass, within sight of the road, a quartz wheel, driven by water power, is silent, useless. "I can't get no one to help me," said the proprietor, a typical old-time miner, as his form, bent from bearing pick and shovel, disappeared in the forest by the roadside.

It is not long until the road passes from the mountain into Wenatchee Valley, famous for its apples, on to the junction of the river that enriches the valley with the Columbia, sweeping down from the north.

Both sides of the Columbia are so attractive that it is difficult to choose whether to go north by the left bank

ON LAKE KECHEELUS, WASHINGTON

IN LYMAN PASS, LAKE CHELAN, WASHINGTON

BRIDGE CREEK,

THE NARROWS, SPOKANE RIVER, W[illegible]

or the right bank. The best way to settle the difficulty is to take both roads in turn and so have the better opportunity of studying the varied cliffs that border the stream all the way from Wenatchee to the vicinity of Lake Chelan. One advantage of choosing the road on the right bank for the trip up-stream is the necessity of crossing the little Orondo ferry that swings far down the river with the strong current, then struggles back to the appointed landing place in unexpected recovery.

From the river the road at last turns into the hills, and rapidly ascends by means of a series of switchbacks from which there are distant views of the Columbia, rushing on to the sea as in the days when Lewis and Clark and their pioneering successors eagerly fought their way past these strange rock formations.

A few miles of the uplands leads to the spot where wonderful Chelan Lake comes to view in sudden, surprising splendor. For fifty miles this highland lake stretches its sinuous course, first along the low-lying hills where the Chelan apples grow, then back into the mountains of Chelan Forest, which rise in terraces from three to eight or nine thousand feet above the water. All the way from Chelan Village to Stehekin the steamer cleaves the waters for passengers who exclaim until they have no words left, who look in amazement at the waters beneath, at the heights above, at the clouds in the blue heavens. They think of the Indians who declare that once there was a plain where is now the lake, and that a great serpent came to destroy their peace of mind and kill the game on which they lived. In response to their prayer the Great Spirit killed the serpent, and raised mountains about his dead body,

and covered him over with water—the waters of serpent-like Chelan. In some places the lake is but a mile wide; in others it is three or four miles broad. Sometimes the surrounding mountains seem to make an end to it; then it turns and again stretches far away. Finally the mountain walls rise almost like precipices five and even six thousand feet above the water. Down through clefts in the mountains come streams like Railroad Creek, which descends six thousand feet in twenty miles. Above the tributary canyons is wild mountain country where snows abide, where glaciers send down their icy waters to the lake, where the winding, climbing trail lures to wild adventure.

Lake Chelan is by no means the last of the wonders approached by the Sunset Highway. There are still valleys and rivers, forests and cascades. And there are the coulees, first Moses Coulee, then the greater Grand Coulee, thought by many to have been the bed of the Columbia when that stream, temporarily filled up at the Great Bend, was forced to cut gorges across the lava plateau to the south. Alkali lakes are here and there in the depths of the chasm, whose lava walls rise almost vertically from four hundred to six hundred feet.

And all about are the wheat lands where wonderful crops are raised, where still greater crops will appear when the stupendous plans for the irrigation of this section are completely carried out.

One hundred miles beyond Grand Coulee is Spokane, the Queen City of the Inland Empire, which really dates back only to 1881, though in 1872 the discovery of the Cœur d'Alene mines gave it a sort of start. As far

back as 1812 it was the site of Spokane House, a fur-trading post of the Northwest Company. To-day the visitor needs only to follow the High Drive and the Rim Drive, parts of Spokane's beautiful park system, to realize what a change has come to the city built about Spokane Falls, and why it will not be surprising to see, before the century is old, half a million people living here at this western gateway to Washington's Sunset Highway.

CHAPTER XXXIII

WESTERN HIGHWAYS

THERE is a big surprise in store for the motorist who has delayed taking a road tour through the region from the Rocky Mountains to the Pacific Coast because he has had the idea that there are few good roads there. The fact is that the West is gridironed with fine roads. There are many stretches of bad road, but it is usually possible to avoid these. And the day is not far distant when the spirited campaign for good roads will result in highways all the way from the mountains to the sea as remarkable for their surface as for their scenery.

Ultimately there will be as many of these practicable routes as there are transcontinental railroads. All the way from the Canadian line to the Mexican border these roads have been marked, and sections of them have been improved. Among others there are the Dixie Highway, the National Old Trails Road, the Pike's Peak Ocean-to-Ocean Highway, and the Lincoln Highway. Then there are north and south roads innumerable, some of them among the best specimens of highway construction to be found anywhere—for instance, the first link in the Park-to-Park Highway, opened in the summer of 1919, which connects Glacier Park and Yellowstone Park; and the second link, opened the same year, from Yellowstone Park to Rocky Mountain Park. Those who have the privilege of traveling over the three hundred and eighty miles between Montana's mountain wonderland and the chief of Wyoming's many glories, following the main range of the Rocky Mountains, will

ALONG THE TRUCKEE RIVER ON THE LINCOLN HIGHWAY, NEAR LAKE TAHOE, CALIFORNIA

PINE CANYON ON THE SUNSET HIGHWAY, WASHINGTON

PHANTOM CANYON HIGHWAY, CAÑON CITY, COLORADO

ROOSEVELT ROAD, ARIZONA

wait eagerly for the announcement of the completion of other links in this tremendous enterprise connecting all the National Parks of the mountain region.

Then there is the Pacific Highway, all the way from San Diego to the Canada line, much of this a boulevard, while all of it is practicable; the Olympic Highway, and the Sunset Highway. There is the Cody Road, Wyoming's stately entrance to Yellowstone Park. There is El Camino Sierra, on the coastwise side of the Sierras, from Owens Lake, California, to Reno, Nevada. There is the Tioga Road from Mono Lake, "the Dead Sea of the West," across the Sierra Nevada Mountains by Tioga Pass at an elevation of 9941 feet, through the remarkable region between the Yosemite and the Tuolumne to a junction with the Oak Flat Road that leads out of the Yosemite and along the cliffs far above the swirling waters of the Merced. There is the Roosevelt Dam Road in Arizona and the tremendously impressive road from Oregon into the redwood forests of Northwestern California. There are the marvelous roads centering at Denver and Ogden, and Carson City and Spokane and Boise City. There are more of these than can be named in a brief chapter, and there will be many more before this volume is a year old.

Every one of the states of the Far West is in the midst of a campaign of road-building. The Colorado Highway Map shows about seven thousand miles of roads, all good for automobile travel, while the machine can cover almost all of the forty-two thousand miles in the state.

Wyoming is doing her best to care for the section of the Lincoln Highway within her bounds, as well as to improve other roads.

During 1919 Montana planned to spend on new roads nearly seven million dollars and to increase the appropriation from year to year.

Idaho is developing the Idaho-Montana Highway, and is caring for other roads that will open to automobile travel thousands of square miles of territory that have been almost inaccessible.

For fifteen years Washington has had a highway policy, and her program is extensive. In addition to the Pacific, Olympic and Sunset Highways, the Highway Commission is working on the McClellan Pass Highway, the National Park Highway, the Inland Empire Highway, and the Central Washington Highway.

Oregon has constructed many hundred miles of perfect roads, but her program is so large that the things already accomplished seem as nothing, though they include such marvels as the Columbia River Highway and the roads along John Day River and the Umpqua River.

In California, where the highway system is already a wonder, large appropriations for new work have been made. It is the purpose to give to every county in the state highways that will be a source of constant pleasure to all who use them. Among other projects destined to be completed soon is the new road, to be open all the year, from the San Joaquin Valley into the Yosemite Valley.

In Arizona, in addition to the Roosevelt Dam Highway, there is the Santa Fé Highway—the name given in this state to the Old Trails Highway—which crosses the Petrified Forest and the Painted Desert, and passes near the Cliff Dwellings of Walnut Canyon and the San

Francisco Peaks; the Borderland Highway, and the Grand Canyon-Nogales Highway.

New Mexico's usable roads connect many of the points most worth while, and in a few years the highways will lead the motorist to all sections of the state.

Already Utah has made practicable sections of the Lincoln Highway across Great Salt Lake Desert and through a number of canyons where travel has been difficult. These are the final bits necessary to put the entire Highway across the state in splendid condition for travel. Then comes the north-and-south Arrowhead Trail, with its branches leading to the Grand Canyon and eastward to the Natural Bridges, connecting with the road to Mesa Verde Park in Colorado.

Nevada has parts of the Lincoln Highway in good condition, as well as a number of other roads of real scenic grandeur, especially about Carson City and Lake Tahoe. But what has been done is looked on only as a beginning.

Those who plan to take journeys to any of these states may wish to write to the State Highway Commissioners at the capital city, asking for a state road map and for the report of work already accomplished and other work planned for the immediate future.

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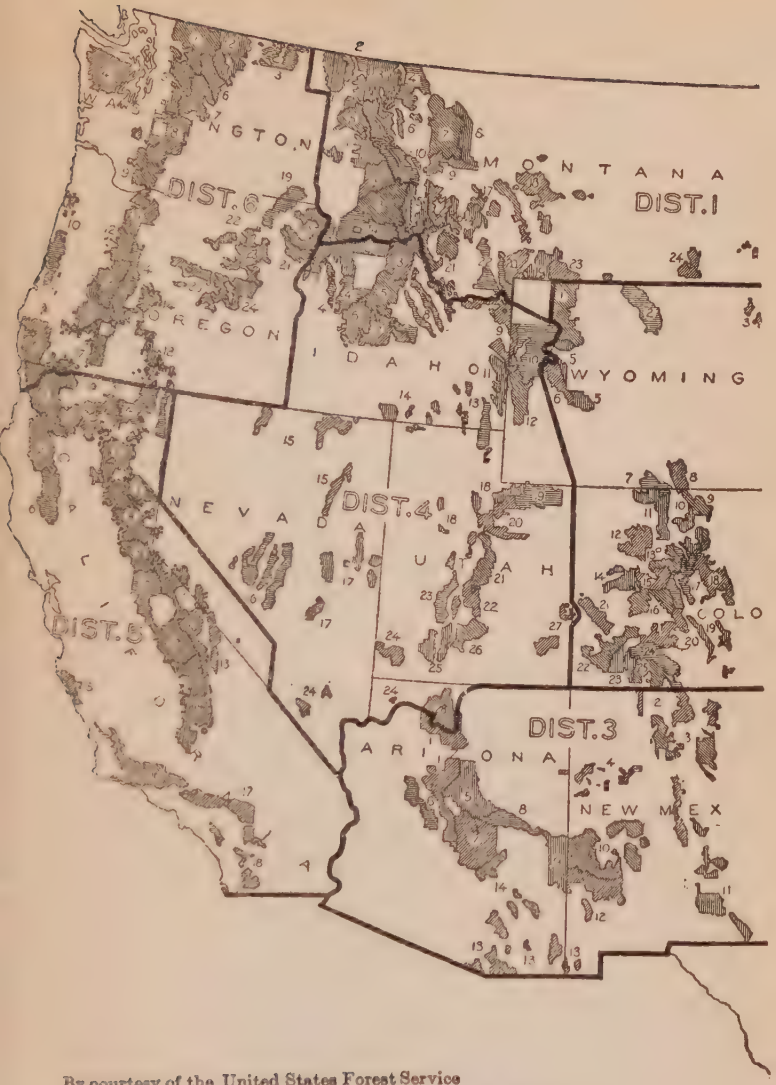

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NATIONAL FORESTS OF THE WEST

To identify a forest, refer to map key numbers in following table

KEY NUMBERS OF NATIONAL FORESTS

(See Map)

State	Forest	Map key numbers	
		District	Forest
Arizona	Apache	3	9
	Coconino	3	5
	Coronado	3	13
	Crook	3	14
	Dixie	4	24
	Kaibab	4	28
	Prescott	3	6
	Sitgreaves	3	8
	Tonto	3	7
	Tusayan	3	1
California	Angeles	5	17
	California	5	6
	Cleveland	5	18
	Crater	6	17
	Eldorado	5	9
	Inyo	5	13
	Klamath	5	1
	Lassen	5	5
	Modoc	5	4
	Mono	5	11
	Monterey	5	15
	Plumas	5	7
	Santa Barbara	5	16
	Sequoia	5	14
	Shasta	5	3
	Sierra	5	12
	Siskiyou	6	16
	Stanislaus	5	10
	Tahoe	5	8
	Trinity	5	2
Colorado	Arapaho	2	10
	Battlement	2	14
	Cochetopa	2	20
	Colorado	2	9
	Durango	2	23
	Gunnison	2	16
	Hayden	2	7
	Holy Cross	2	13
	La Sal	4	27
	Leadville	2	17
	Montezuma	2	22
	Pike	2	18
	Rio Grande	2	24
	Routt	2	11

KEY NUMBERS OF NATIONAL FORESTS—*Continued*

State	Forest	Map key numbers	
		District	Forest
Colorado (Continued)	San Isabel	2	19
	San Juan	2	25
	Sopris	2	15
	Uncompahgre	2	21
	White River	2	12
Idaho	Boise	4	6
	Cache	4	13
	Caribou	4	11
	Challis	4	5
	Clearwater	1	12
	Coeur d'Alene	1	5
	Idaho	4	2
	Kaniksu	1	1
	Lemhi	4	8
	Minidoka	4	14
	Nez Perce	1	14
	Payette	4	4
	Pend Orielle	1	2
	St. Joe	1	11
	Salmon	4	3
	Sawtooth	4	7
	Selway	1	13
	Targhee	4	9
	Weiser	4	1
Montana	Absaroka	1	19
	Beartooth	1	23
	Beaverhead	1	21
	Bitterroot	1	15
	Blackfeet	1	4
	Cabinet	1	6
	Custer	1	24
	Deerlodge	1	16
	Flathead	1	7
	Gallatin	1	20
	Helena	1	17
	Jefferson	1	18
	Kootenai	1	3
	Lewis and Clark	1	8
	Lolo	1	10
	Madison	1	22
	Missoula	1	9
	Sioux	1	25
Nevada	Dixie	4	24
	Eldorado	5	9
	Humboldt	4	15

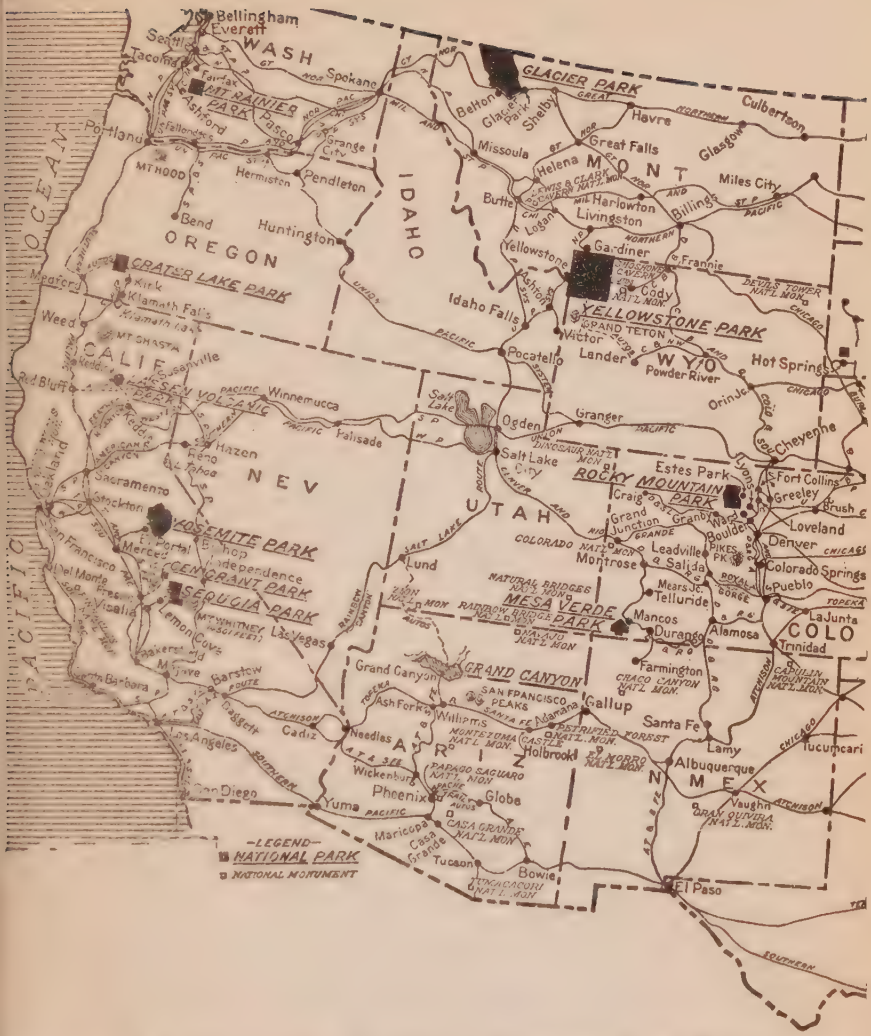
KEY NUMBERS OF NATIONAL FORESTS—*Continued*

State	Forest	Map key numbers	
		District	Forest
Nevada (Continued)	Inyo	5	13
	Mono	5	11
	Nevada	4	17
	Tahoe	5	8
	Toiyabe	4	16
New Mexico	Carson	3	2
	Coronado	3	13
	Datil	3	10
	Gila	3	12
	Lincoln	3	11
	Manzano	3	4
	Santa Fe	3	3
Oregon	Cascade	6	13
	Crater	6	17
	Deschutes	6	14
	Fremont	6	18
	Klamath	5	1
	Malheur	6	24
	Minam	6	21
	Ochoco	6	25
	Oregon	6	11
	Santiam	6	12
	Siskiyou	6	16
	Siuslaw	6	16
	Umatilla	6	22
	Umpqua	6	15
	Wallowa	6	20
	Wenaha	6	19
	Whitman	6	23
Utah	Ashley	4	19
	Cache	4	13
	Dixie	4	24
	Fillmore	4	23
	Fishlake	4	22
	La Sal	4	27
	Manti	4	21
	Minidoka	4	14
	Powell	4	26
	Sevier	4	25
	Uinta	4	20
	Wasatch	4	18
Washington	Chelan	6	6
	Columbia	6	9
	Colville	6	3

KEY NUMBERS OF NATIONAL FORESTS—*Continued*

State	Forest	Map key numbers	
		District	Forest
Washington (Continued)	Kaniksu	1	1
	Okganogan	6	2
	Olympic	6	4
	Rainier	6	8
	Snoqualmie	6	5
	Washington	6	1
	Wenaha	6	19
	Wenatchee	6	7
Wyoming	Ashley	4	19
	Bighorn	2	2
	Black Hills	2	3
	Bridger	2	6
	Caribou	4	7
	Hayden	2	7
	Medicine Bow	2	8
	Shoshone	2	1
	Targhee	4	9
	Teton	4	10
	Washakie	2	5
	Wyoming	4	12

SANTA CLARA


Bellingham
Everett
Seattle
Tacoma
WASH
Spokane
MT. RAINIER NAT'L PARK
Portland
Vancouver
Astoria
Longview
Grays Harbor
Grange City
Hermiston
Pendleton
MT HOOD
Bend
Huntington
OREGON
IDAHO
CRATER LAKE PARK
Medford
Klamath Falls
Weed
MT. SHASTA
CALIF
Redding
Red Bluff
Eureka
LASSEN VOLCANIC NAT'L PARK
Winnemucca
Hazen
Reno
Tahoe
Sacramento
Stockton
NEV
Oakland
San Francisco
Merced
YOSEMITE PARK
Fresno
Visalia
SEQUOIA NAT'L PARK
GEN'L GRANT NAT'L PARK
Independence
Lone Pine
MT. WHITNEY
Lemon Cove
Bakersfield
Mojave
Barstow
Santa Barbara
Los Angeles
Cadiz
Needles
Las Vegas
Grand Canyon
Ash Fork
Williams
Wickenburg
Phoenix
Yuma
San Diego
Globe
Maricopa
Casa Grande
Tucson
Bowie
Kingman
Salt Lake
Ogden
Pocatello
Idaho Falls
Palisade
Granger
Lund
Montrose
Grand Junction
Leadville
Salida
Telluride
Mears Jc.
Durango
Mancos
Farmington
Gallup
Holbrook
Santa Fe
Albuquerque
Lamy
Tucumcari
Vaughn
El Paso
Alamosa
La Junta
Trinidad
Pueblo
Colorado Springs
Denver
Boulder
Loveland
Greeley
Fort Collins
Cheyenne
Hot Springs
Orin Jc.
Powder River
Lander
Victor
Jackson
Yellowstone
Gardiner
Cody
Frannie
Livingston
Harlowton
Billings
Miles City
Butte
Helena
Missoula
Great Falls
Havre
Shelby
Glacier Park
Culbertson
Glasgow
GLACIER PARK
YELLOWSTONE PARK
GRAND CANYON
MESA VERDE NAT'L PARK
ROCKY MOUNTAIN PARK
Estes Park
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